ZooKeys 1209: 199–230 (2024)
DOI: 10.3897/zookeys.1209.117368

Checklist

The jumping plant-lice (Hemiptera, Psylloidea) in Urban Green Spaces of Bogotá (Colombia), with descriptions of two new species and redescription of *Mastigimas colombianus* Burckhardt, Queiroz and Drohojowska

Diana Isabel Rendón-Mera[1,2,3], Daniel Burckhardt[1], Juliana Durán[4], Valentina Ocampo[4], Sergio Andrés Vargas-Fonseca[4,5]

1 *Naturhistorisches Museum, Augustinergasse 2, 4001 Basel, Switzerland*
2 *University of Basel, Petersplatz 1, 4001 Basel, Switzerland*
3 *Natural History Museum, Cromwell Road, London, UK*
4 *Jardín Botánico de Bogotá José Celestino Mutis, Av. Calle 63 No. 68-95, Bogotá, D.C., Colombia*
5 *Laboratorio de Entomología, Departamento de Biología, Pontificia Universidad Javeriana, Carrera 7, No. 43-82, Bogotá, D.C., Colombia*
Corresponding author: Diana Isabel Rendón-Mera (diana.rendonmera@nhm.ac.uk)

OPEN ACCESS

Academic editor: Igor Malenovský
Received: 14 December 2023
Accepted: 20 June 2024
Published: 8 August 2024

ZooBank: https://zoobank.org/4BEF4E4E-CCCC-49A0-A4F4-07DBA5CF2261

Citation: Rendón-Mera DI, Burckhardt D, Durán J, Ocampo V, Vargas-Fonseca SA (2024) The jumping plant-lice (Hemiptera, Psylloidea) in Urban Green Spaces of Bogotá (Colombia), with descriptions of two new species and redescription of *Mastigimas colombianus* Burckhardt, Queiroz and Drohojowska. ZooKeys 1209: 199–230. https://doi.org/10.3897/zookeys.1209.117368

Copyright: © Diana Isabel Rendón-Mera et al. This is an open access article distributed under terms of the Creative Commons Attribution License (Attribution 4.0 International – CC BY 4.0).

Abstract

In a survey of the arthropod fauna of 33 Urban Green Spaces (UGS) in Bogotá, Colombia, between 2017 and 2019, 21 species (3,825 specimens) of Psylloidea were collected. These represent all seven recognised families of jumping plant-lice and include seven species identified only to genus. The specimens, all adults, were collected on 30 plant species used for arborization in the UGS. Two species are described as new (*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, **sp. nov.** and *Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, **sp. nov.**), one species is redescribed (*Mastigimas colombianus* Burckhardt, Queiroz & Drohojowska) and one species is recorded for the first time from Colombia (*Calinda trinervis* Olivares & Burckhardt). Among the seven species identified only to genus is an undescribed species of *Melanastera*, representing a genus not previously known from Colombia. Fourteen species found during the survey are probably native (66%) and seven (33%) adventive. Our findings highlight the significance of UGS for preservation of biological diversity and stress the importance of using native plants in urban landscape planning for the conservation of the native entomofauna.

Key words: Biodiversity, city parks, insect–plant interactions, Neotropical region, psyllids, Sternorrhyncha, taxonomy, urbanisation

Introduction

Urbanisation, the most irreversible form of land-use by the ever increasing human population, is one of the main drivers of the current extinction crisis (McKinney 2002; Seto et al. 2012; Díaz et al. 2019; Kong et al. 2021; Jaureguiberry et al. 2022). Accompanied by the degradation, fragmentation and loss of natural habitats (Foley et al. 2005; Elmqvist et al. 2013; Kong et al. 2021),

urbanisation usually favours the presence of exotic species, leads to biotic homogeneity, and ultimately results in the loss of native species (McKinney 2002, 2008; Elmqvist et al. 2013; McDonald et al. 2018). Cities have dramatically expanded during the last decades and, as of today, more than half of the world's population resides in urban areas with an expected increase to 70% by 2050 (Elmqvist et al. 2013; United Nations 2019).

As cities grow, Urban Green Spaces (UGS) become increasingly critical for supporting native organisms (Goddard et al. 2010; Aronson et al. 2014; Ives et al. 2016). These spaces comprise natural, semi-natural and artificial habitats, including remnants of native vegetation, parks, gardens, urban wastelands and green infrastructure (Tzoulas et al. 2007; Aronson et al. 2017; Lepczyk et al. 2017). However, not all UGS have equal conservation value, as the degree to which they can support biodiversity depends on several factors such as quality, size, connectivity, biotic interactions, land-use history and human population density (Aronson et al. 2017). Consequently, it is necessary to integrate ecological and biodiversity aspects into urban planning, to develop strategies for the design and management of these spaces to serve biodiversity conservation (McKinney 2002; Elmqvist et al. 2013; Aronson et al. 2017; McDonald et al. 2018).

Colombia is located in the north-west of South America and is one of the world's megadiverse countries, home to approximately 10% of the world's species and two of the world's biodiversity hotspots: Tropical Andes and Tumbes–Chocó–Magdalena (Myers et al. 2000; Baptiste et al. 2017). At the same time, it is a highly urbanised country, with ~ 80% of its 50 million human inhabitants residing in urban areas (OECD 2022). This contrast is particularly evident in the Andean region, which exhibits both the highest levels of biological diversity and endemism, and of urbanisation and population density (Anselm et al. 2018; Carvajal-Castro et al. 2019). The Colombian capital Bogotá, the largest city in the country, is located in the middle of the Andes mountains, in the Eastern Ranges. Like other Latin American cities, much of Bogotá's urban growth during the last two centuries has been unplanned and informal (Andrade et al. 2013), driven by an accelerated increase of rural-to-urban migration (Dufour and Piperata 2004). As a result, UGS only began to appear by the end of the 19th century and, as late as the end of the 20th century, became relevant under the concept of "Ecological Main Structure" (Andrade et al. 2013, 2014). Today, the concept has been decreed as one of the environmental determinants of land use-planning (Andrade et al. 2013, 2014). Bogotá has around 7,000 UGS of different scale and function, and ~ 1.4 million urban trees (Alcaldía Mayor de Bogotá 2009; Jardín Botánico de Bogotá 2023). However, despite the need for information on ecology and biodiversity to develop these strategies (McKinney 2002; Elmqvist et al. 2013; Aronson et al. 2017; McDonald et al. 2018), there are only a few studies that explore urban biodiversity in Colombia (e.g. Marín-Gómez et al. 2016; Ocampo Flórez et al. 2018; Durán-Prieto and Ocampo 2019; Durán-Prieto et al. 2020, 2023; Martínez and Morales 2020; Garizábal-Carmona and Mancera-Rodríguez 2021; Olaya-Arenas et al. 2022; Roncallo et al. 2022).

Psylloidea (jumping plant-lice or psyllids) constitute one of the superfamilies of Sternorrhyncha with more than 4,000 described and probably just as many undescribed species (Burckhardt et al. 2021; Ouvrard 2023). Psyllids are generally monophagous or narrowly oligophagous on one or a few closely related host plant species (Hodkinson 1974; Burckhardt et al. 2014; Ouvrard et al. 2015). A host plant is defined as that plant "on which a psyllid species completes its

immature-to-adult life cycle" (Burckhardt et al. 2014). In practice, a host plant can be recognised by the presence of fifth instar immatures. Unlike the relatively immobile immatures, the winged adults disperse through flight or by air currents and are often found also on non-host plants (Burckhardt et al. 2014).

Psyllids are found in all biogeographic realms but are probably most species-rich in the tropics and the south temperate regions though these faunas are only poorly known, particularly those of the Afrotropical and Neotropical realms (Hollis 2004; Hodkinson 2009; Burckhardt and Queiroz 2020; Mauck et al. 2024). Little is known about the psyllid fauna of Colombia. Rendón-Mera et al. (2017) published a generic overview on the Colombian psyllids with a list of species known at the time. Additional information on psyllids from Bogotá is provided by Pinzón et al. (2002).

Here, the psyllids collected during a survey of the arthropod fauna of 33 UGS in Bogotá by the Botanical Garden "José Celestino Mutis" of Bogotá are discussed. The survey was conducted between 2017 and 2019, focussing on 30 species of native and exotic plants.

Material and methods

Material

Collections were conducted between 2017 and 2019 in 33 Urban Green Spaces (UGS) of nine of the 19 urban districts ("localidades") of Bogotá (Figs 1, 2, Table 1, Appendix 1). Specimens were collected using sweep nets and entomological aspirators on the tree/shrub canopy cover of 30 plant species used for arborization in the city (Table 2). Unless stated otherwise, material is preserved pinned.

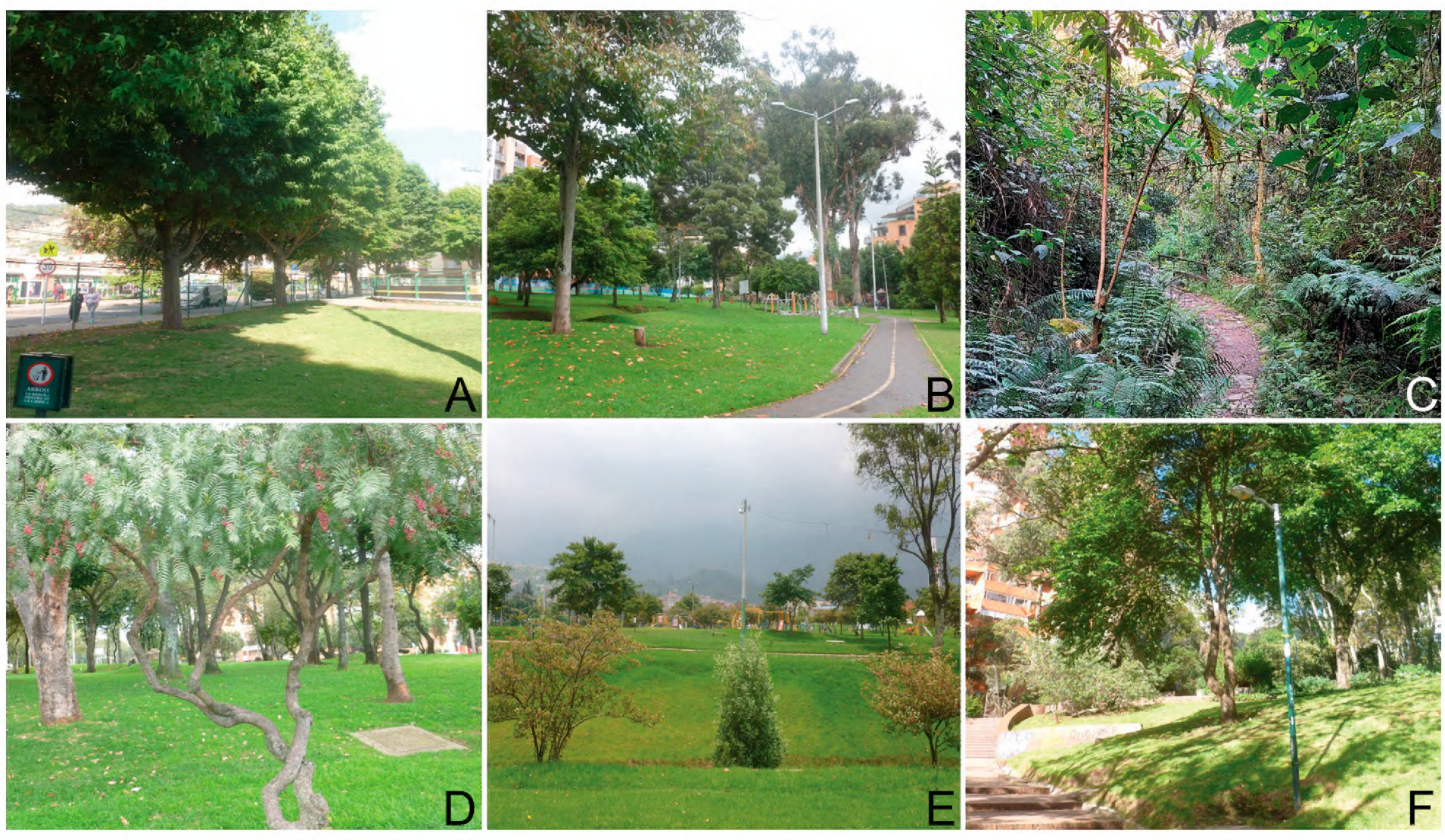

Figure 1. Some urban green spaces of Bogotá **A** Parque Altablanca **B** Parque Ginebra-Bella Suiza **C** Sendero Quebrada la Vieja **D** Parque La Francia **E** Parque San Cristóbal **F** Parque La Independencia.

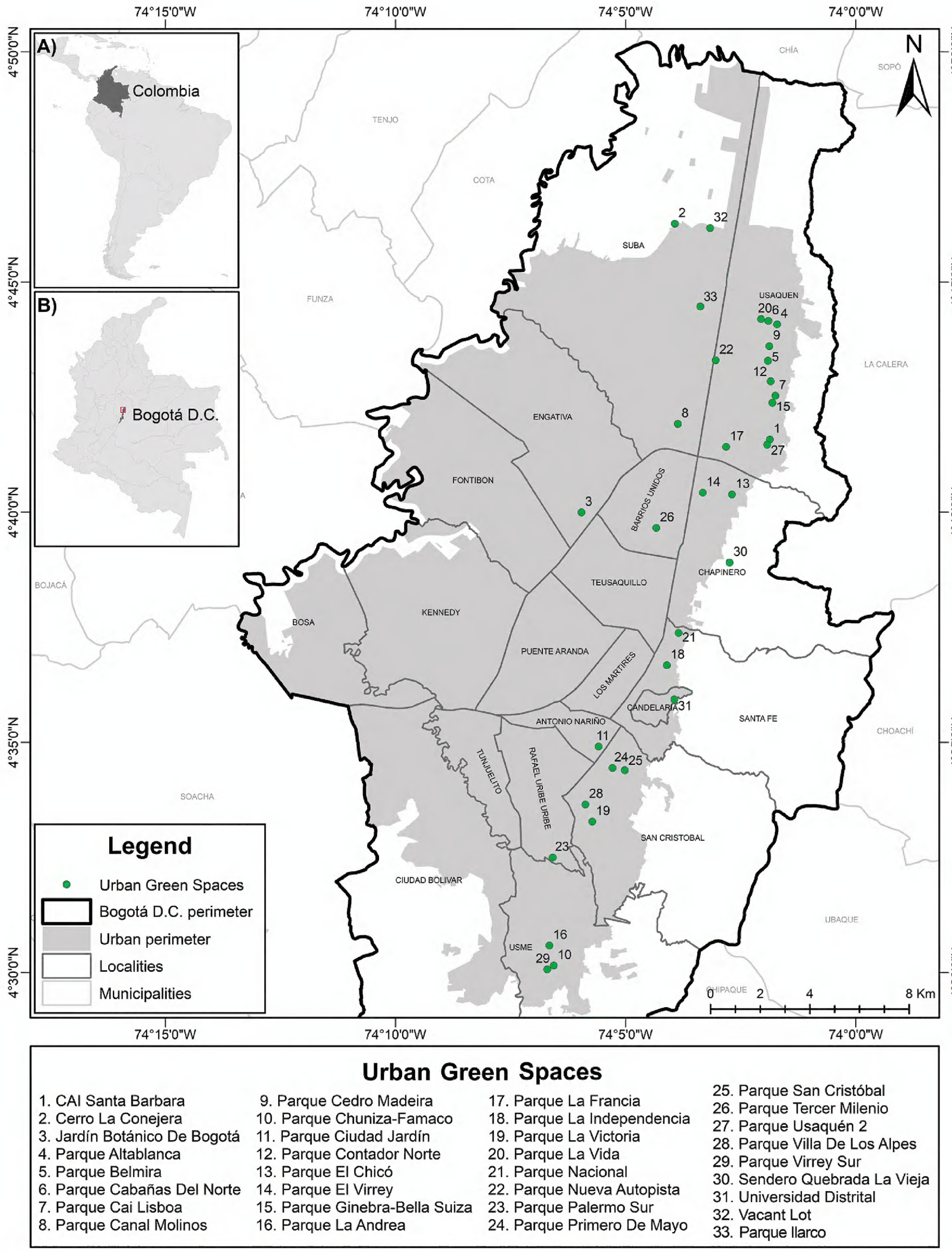

Figure 2. Map of Bogotá indicating localities and sampled urban green spaces.

Holotypes are deposited in the entomological collection of the Museo Javeriano de Historia Natural of the Pontificia Universidad Javeriana, Bogotá, Colombia (**MPUJ_ENT**). Paratypes and non-type material are deposited in MPUJ_ENT and the Naturhistorisches Museum, Basel, Switzerland (**NHMB**).

Table 1. Urban Green Spaces (UGS) with examined plants and psyllid species with number of collected adults. Plants confirmed in the literature as hosts or likely hosts are marked with § (see also text).

UGS	Plant species	Psyllid species	Number of adults
CAI Santa Barbara	*Quercus humboldtii* (Fagaceae)	*Calophya schini*	1
Cerro La Conejera	§ *Acacia dealbata* (Fabaceae)	*Acizzia acaciaebaileyanae*	4
Cerro La Conejera	§ *Acacia melanoxylon* (Fabaceae)	*Acizzia uncatoides*	2
Cerro La Conejera	§ *Baccharis* sp. (Asteraceae)	*Calinda gibbosa*	1
Cerro La Conejera	*Myrcianthes leucoxyla* (Myrtaceae)	*Tuthillia latipennis*	1
Jardín Botánico de Bogotá	*Myrcianthes* sp. (Myrtaceae)	*Trioza* sp. 1	1
Jardín Botánico de Bogotá	*Myrcianthes* sp. (Myrtaceae)	*Tuthillia latipennis*	1
Parque Altablanca	*Lafoensia acuminata* (Lythraceae)	*Synoza cornutiventris*	2
Parque Belmira	*Schinus areira* (Anacardiaceae)	*Acizzia acaciaebaileyanae*	1
Parque Belmira	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	8
Parque Cabañas del Norte	*Lafoensia acuminata* (Lythraceae)	*Acizzia acaciaebaileyanae*	5
Parque Cabañas del Norte	*Lafoensia acuminata* (Lythraceae)	*Calophya schini*	1
Parque Cabañas del Norte	*Lafoensia acuminata* (Lythraceae)	*Ctenarytaina spatulata*	1
Parque Cabañas del Norte	*Lafoensia acuminata* (Lythraceae)	*Mastigimas colombianus*	1
Parque Cabañas del Norte	*Pittosporum undulatum* (Pittosporaceae)	*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	1
Parque Cabañas del Norte	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	419
Parque CAI Lisboa	*Pittosporum undulatum* (Pittosporaceae)	*Acizzia uncatoides*	2
Parque CAI Lisboa	*Pittosporum undulatum* (Pittosporaceae)	*Synoza cornutiventris*	6
Parque Canal Molinos	*Bocconia frutescens* (Papaveraceae)	*Acizzia acaciaebaileyanae*	2
Parque Canal Molinos	§ *Cedrela montana* (Meliaceae)	*Mastigimas colombianus*	17
Parque Canal Molinos	§ *Cedrela montana* (Meliaceae)	*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	38
Parque Canal Molinos	§ *Ficus* americana subsp. andicola (Moraceae)	*Synoza cornutiventris*	9
Parque Cedro Madeira	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	17
Parque Chuniza-Famaco	*Quercus humboldtii* (Fagaceae)	*Calophya schini*	2
Parque Chuniza-Famaco	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	558
Parque Ciudad Jardín	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	9
Parque Ciudad Jardín	*Lafoensia acuminata* (Lythraceae)	*Calophya schini*	2
Parque Ciudad Jardín	*Lafoensia acuminata* (Lythraceae)	*Syncoptozus mexicanus*	1
Parque Ciudad Jardín	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	726
Parque Contador Norte	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	117
Parque Contador Norte	*Lafoensia acuminata* (Lythraceae)	*Acizzia acaciaebaileyanae*	2
Parque Contador Norte	*Liquidambar styraciflua* (Altingiaceae)	*Acizzia acaciaebaileyanae*	2
Parque Contador Norte	*Liquidambar styraciflua* (Altingiaceae)	*Calophya schini*	1
Parque Contador Norte	*Liquidambar styraciflua* (Altingiaceae)	*Ctenarytaina spatulata*	1
Parque Contador Norte	*Liquidambar styraciflua* (Altingiaceae)	*Synoza cornutiventris*	2
Parque Contador Norte	*Pittosporum undulatum* (Pittosporaceae)	*Synoza cornutiventris*	1
Parque El Chicó	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	10
Parque El Chicó	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	7
Parque El Virrey	§ *Acacia melanoxylon* (Fabaceae)	*Acizzia uncatoides*	19
Parque El Virrey	§ *Cedrela montana* (Meliaceae)	*Mastigimas colombianus*	38
Parque El Virrey	§ *Cedrela montana* (Meliaceae)	*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	13
Parque El Virrey	*Croton coriaceus* (Euphorbiaceae)	*Calophya schini*	14
Parque El Virrey	*Delostoma integrifolium* (Bignoniaceae)	*Synoza cornutiventris*	1
Parque El Virrey	*Feijoa sellowiana* (Myrtaceae)	*Glycaspis brimblecombei*	1
Parque El Virrey	*Fraxinus chinensis* (Oleaceae)	*Syncoptozus mexicanus*	1

UGS	Plant species	Psyllid species	Number of adults
Parque El Virrey	*Ligustrum* sp. (Oleaceae)	*Syncoptozus mexicanus*	2
Parque El Virrey	*Magnolia grandiflora* (Magnoliaceae)	*Acizzia uncatoides*	28
Parque El Virrey	§ *Magnolia grandiflora* (Magnoliaceae)	*Syncoptozus mexicanus*	37
Parque El Virrey	*Pittosporum undulatum* (Pittosporaceae)	*Acizzia uncatoides*	1
Parque El Virrey	*Salix humboldtiana* (Salicaceae)	*Calophya schini*	4
Parque Ginebra-Bella Suiza	*Ficus* sp. (Moraceae)	Triozidae gen. sp. 3	1
Parque Ginebra-Bella Suiza	*Liquidambar styraciflua* (Altingiaceae)	*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	1
Parque Ginebra-Bella Suiza	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	148
Parque Ginebra-Bella Suiza	*Schinus areira* (Anacardiaceae)	*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	2
Parque Ginebra-Bella Suiza	*Schinus areira* (Anacardiaceae)	*Synoza cornutiventris*	1
Parque Tercer Ilarco	*Bocconia frutescens* (Papaveraceae)	*Acizzia acaciaebaileyanae*	2
Parque Tercer Ilarco	*Clusia* sp. (Clusiaceae)	*Glycaspis brimblecombei*	1
Parque Tercer Ilarco	*Croton coriaceus* (Euphorbiaceae)	*Calinda* sp.	1
Parque Tercer Ilarco	*Croton coriaceus* (Euphorbiaceae)	*Mastigimas colombianus*	1
Parque Tercer Ilarco	*Croton coriaceus* (Euphorbiaceae)	*Platycorypha* sp.	1
Parque Tercer Ilarco	*Croton coriaceus* (Euphorbiaceae)	*Synoza cornutiventris*	1
Parque Tercer Ilarco	*Prunus serotina* (Rosaceae)	*Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	1
Parque Tercer Ilarco	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	8
Parque La Andrea	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	99
Parque La Francia	*Lafoensia acuminata* (Lythraceae)	*Synoza cornutiventris*	2
Parque La Francia	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	7
Parque La Independencia	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	30
Parque La Independencia	*Liquidambar styraciflua* (Altingiaceae)	*Synoza cornutiventris*	1
Parque La Independencia	*Quercus humboldtii* (Fagaceae)	*Synoza cornutiventris*	1
Parque La Victoria	*Pittosporum undulatum* (Pittosporaceae)	*Calophya schini*	1
Parque La Victoria	*Quercus humboldtii* (Fagaceae)	*Calophya schini*	5
Parque La Victoria	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	250
Parque La Vida	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	244
Parque La Vida	*Ficus* sp. (Moraceae)	Triozidae gen. sp. 3	1
Parque La Vida	*Pittosporum undulatum* (Pittosporaceae)	*Synoza cornutiventris*	6
Parque Nacional	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	4
Parque Nueva Autopista	*Ficus* sp. (Moraceae)	*Calophya schini*	1
Parque Nueva Autopista	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	3
Parque Palermo Sur	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	2
Parque Palermo Sur	*Pittosporum undulatum* (Pittosporaceae)	*Acizzia uncatoides*	1
Parque Palermo Sur	*Pittosporum undulatum* (Pittosporaceae)	*Calophya schini*	1
Parque Palermo Sur	*Pittosporum undulatum* (Pittosporaceae)	Triozidae gen. sp. 2	1
Parque Palermo Sur	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	26
Parque Primero de Mayo	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	106
Parque Primero de Mayo	*Quercus humboldtii* (Fagaceae)	*Synoza cornutiventris*	1
Parque San Cristóbal	*Lafoensia acuminata* (Lythraceae)	*Synoza cornutiventris*	1
Parque San Cristóbal	*Pittosporum undulatum* (Pittosporaceae)	*Synoza cornutiventris*	1
Parque San Cristóbal	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	89
Parque Tercer Milenio	§ *Clusia* sp. (Clusiaceae)	*Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	85
Parque Tercer Milenio	*Magnolia grandiflora* (Magnoliaceae)	*Calophya schini*	6
Parque Tercer Milenio	§ *Magnolia grandiflora* (Magnoliaceae)	*Syncoptozus mexicanus*	33
Parque Tercer Milenio	*Sambucus nigra* (Viburnaceae)	*Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	2
Parque Usaquén 2	*Ficus* sp. (Moraceae)	*Calophya schini*	1
Parque Usaquén 2	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	4

UGS	Plant species	Psyllid species	Number of adults
Parque Usaquén 2	*Liquidambar styraciflua* (Altingiaceae)	*Calophya schini*	1
Parque Usaquén 2	*Pittosporum undulatum* (Pittosporaceae)	*Calophya schini*	1
Parque Usaquén 2	*Pittosporum undulatum* (Pittosporaceae)	*Synoza cornutiventris*	1
Parque Villa de los Alpes	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	120
Parque Villa de los Alpes	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	81
Parque Virrey Sur	§ *Ficus* sp. (Moraceae)	*Synoza cornutiventris*	29
Parque Virrey Sur	§ *Schinus areira* (Anacardiaceae)	*Calophya schini*	51
Sendero Quebrada La Vieja	*Miconia elaeoides* (Melastomataceae)	*Ctenarytaina spatulata*	1
Sendero Quebrada La Vieja	*Miconia elaeoides* (Melastomataceae)	*Melanastera* sp.	1
Sendero Quebrada La Vieja	*Piper bogotense* (Piperaceae)	*Acizzia uncatoides*	1
Sendero Quebrada La Vieja	*Piper bogotense* (Piperaceae)	*Ctenarytaina eucalypti*	5
Universidad Distrital	*Acacia decurrens* (Fabaceae)	*Acizzia uncatoides*	15
Universidad Distrital	§ *Acacia melanoxylon* (Fabaceae)	*Acizzia uncatoides*	125
Universidad Distrital	§ *Baccharis latifolia* (Asteraceae)	*Calinda gibbosa*	3
Universidad Distrital	*Baccharis latifolia* (Asteraceae)	*Calinda* trinervis	1
Universidad Distrital	*Croton coriaceus* (Euphorbiaceae)	*Acizzia uncatoides*	2
Universidad Distrital	Lycianthes lycioides (Solanaceae)	*Acizzia uncatoides*	24
Universidad Distrital	*Oreopanax incisus* (Araliaceae)	*Acizzia uncatoides*	1
Universidad Distrital	*Oreopanax incisus* (Araliaceae)	*Ctenarytaina spatulata*	7
Universidad Distrital	*Quercus humboldtii* (Fagaceae)	*Acizzia uncatoides*	1
Universidad Distrital	*Quercus humboldtii* (Fagaceae)	*Calinda gibbosa*	1
Universidad Distrital	*Quercus humboldtii* (Fagaceae)	*Ctenarytaina spatulata*	1
Universidad Distrital	*Quercus humboldtii* (Fagaceae)	Triozidae gen. sp. 3	1
vacant lot	*Quercus humboldtii* (Fagaceae)	*Acizzia uncatoides*	1
vacant lot	*Quercus humboldtii* (Fagaceae)	Triozidae gen. sp. 1	1

Table 2. Psyllid species, hosts (cf. text) and numbers of adult psyllid specimens collected on hosts and non-hosts.

Psyllid species	Host taxon	Adults on host	Adults on non-host
Calophya schini	*Schinus areira*	2378	42 (= 1.8%)
Synoza cornutiventris	*Ficus* spp.	803	28 (= 3.5%)
Acizzia uncatoides	mimosoid Fabaceae	161	62 (= 38.5%)
Leuronota albilinea Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	*Clusia* sp.	85	1 (= 1.2%)
Mastigimas colombianus	*Cedrela montana*	55	2 (= 3.6%)
Mastigimas longicaudatus Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.	*Cedrela montana*	51	6 (= 11.8%)
Syncoptozus mexicanus	*Magnolia grandiflora*	30	4 (= 13.3%)
Acizzia acaciaebaileyanae	mimosoid Fabaceae	4	12
Calinda gibbosa	*Baccharis* spp.	4	1
Ctenarytaina spatulata	*Eucalyptus* spp.		11
Ctenarytaina eucalypti	*Eucalyptus* spp.		5
Triozidae gen. sp. 3	unknown		3
Glycaspis brimblecombei	*Eucalyptus* spp.		2
Tuthillia latipennis	*Myrcianthes* spp.		2
Calinda trinervis	unknown		1
Calinda sp.	unknown		1
Melanastera sp.	unknown		1
Platycorypha sp.	unknown		1
Trioza sp. 1	unknown		1
Triozidae gen. sp. 1	unknown		1
Triozidae gen. sp. 2	unknown		1

Species description

Morphological terminology follows Bastin et al. (2023). Body length was taken from ethanol-preserved specimens in lateral view, measuring the distance from the tip of genal process to the tip of wings when folded over the body. All other measurements were taken from slide mounted specimens as indicated in Bastin et al. (2023). In *Leuronota*, vein length is measured as a linear distance. Measurements are given in mm and expressed as range (mean ± standard deviation). Slide preparation protocol follows Queiroz et al. (2017).

Conventions

Taxa are arranged alphabetically (families and genera) following the classification of Burckhardt et al. (2021). Plant names and information of their origin correspond to POWO (2023). The following markings are used: (*) for new species records for Colombia and (‡) for adventive species. Material examined is presented per urban district, written in bold and arranged alphabetically. Plants mentioned in this section are those from which specimens were collected and not necessarily host plants as defined by Burckhardt et al. (2014). Distribution in Colombia is presented by department.

Host plants

No immature psyllids were collected during the survey and none of the sampled plant species could, therefore, be confirmed as host in the sense of Burckhardt et al. (2014). Under “Host plant” we cite reliable literature records with the respective reference, or we discuss reasons for assuming that a particular plant constitutes a host. In Table 1 we use this information to classify plants into hosts (marked with §) and non-hosts.

Abbreviations

AL—Antenna length; **AP**—Apical portion of female proctiger length; **BL**—Body length; **CRL**—Circumanal ring length; **DL**—Distal segment of aedeagus length; **FL**—Forewing length; **FP**—Female proctiger length; **FW**—Forewing width; **GL**—Genal processes length; **HW**—Head width; **MP**—Male proctiger length; **PL**—Paramere length; **SP**—Female subgenital plate length; **TL**—Metatibia length; **UGS**—Urban Green Space; **VL**—Vertex length.

Taxonomy

Psylloidea Latreille, 1807
Aphalaridae Löw, 1879

‡ *Ctenarytaina eucalypti* (Maskell, 1890)

Material examined. Chapinero: • 1 ♂, 4 ♀; Quebrada La Vieja; 4.6495, −74.0466; 2764 m; 06.iv.2017; J. Duran leg.; *Piper bogotense* (Piperaceae); MPUJ_ENT.

Distribution. Colombia: Boyacá and Bogotá (Pinzón et al. 2002; Rendón-Mera et al. 2017).—Native to Australia, introduced into Africa, the Americas, Asia, Europe, and New Zealand (Makunde et al. 2020).

Host plant. *Eucalyptus* L'Hér. spp. (Myrtaceae) (Makunde et al. 2020).

‡ *Ctenarytaina spatulata* Taylor, 1997

Material examined. Chapinero: • 1 ♀; Quebrada La Vieja; 4.6474, −74.0447; 2785 m; 20.vi.2017; J. Duran leg.; *Miconia elaeoides* (Melastomataceae); MPUJ_ENT. **Santa Fe:** • 4 ♂, 3 ♀; Universidad Distrital; 4.5989, −74.0656; 2701 m; 05.v.2017; J. Duran leg.; *Oreopanax incisus* (Araliaceae); MPUJ_ENT• 1 ♀; same but 4.5987, −74.0653; 2713 m; *Quercus humboldtii* (Fagaceae); MPUJ_ENT. **Usaquén:** • 1 ♀; Parque Cabañas del Norte; 4.7359, −74.0318; 2575 m; 16.iii.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 1 ♀; Parque Contador Norte; 4.715, −74.0302; 2595 m; 02.iv.2018; V. Ocampo leg.; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá (Rendón-Mera et al. 2017).—Native to Australia, introduced into the Americas, Europe, and New Zealand (Makunde et al. 2020).

Host plant. *Eucalyptus* L'Hér. spp. (Myrtaceae) (Makunde et al. 2020).

‡ *Glycaspis brimblecombei* Moore, 1964

Material examined. Chapinero: • 1 ♀; Parque El Virrey; 4.6736, −74.0548; 2590 m; 28.iii.2017; J. Duran leg.; *Feijoa sellowiana* (Myrtaceae); MPUJ_ENT. **Santa Fe:** • 1 ♀; Parque Ilarco; 4.7003, −74.0655; 2569 m; 19.ix.2017; J. Duran leg.; *Clusia* sp. (Clusiaceae); MPUJ_ENT.

Distribution. Colombia: Antioquia, Bogotá, Casanare, Risaralda, and Valle del Cauca (Rodas et al. 2014; Rendón-Mera et al. 2017).—Native to Australia, introduced into Africa, the Americas, Asia, Europe, and New Zealand (Pugh et al. 2017; Makunde et al. 2020).

Host plant. *Corymbia* K.D.Hill and L.A.S.Johnson, and *Eucalyptus* L'Hér. spp. (Myrtaceae) (Makunde et al. 2020).

‡ *Syncoptozus mexicanus* Hodkinson, 1990

Material examined. Antonio Nariño: • 1 ♂; Parque Ciudad Jardín; 4.5819, −74.0937; 2601 m; 13.iv.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT. **Chapinero:** • 1 ♂; Parque El Virrey; 4.6744, −74.0571; 2580 m; 20.vi.2017; J. Duran leg.; *Fraxinus chinensis* (Oleaceae); MPUJ_ENT • 1 ♂, 1 ♀; same but 4.674, −74.0565; 2581 m; *Ligustrum* sp. (Oleaceae); MPUJ_ENT • 3 ♂, 6 ♀; same but 4.6712, −74.0497; 2583 m; *Magnolia grandiflora* (Magnoliaceae); MPUJ_ENT • 12 ♂, 16 ♀; same but 4.6753, −74.0581; 2579 m; 28.iii.2017; MPUJ_ENT. **Santa Fe:** • 14 ♂, 17 ♀; Parque Tercer Milenio; 4.5971, −74.0830; 2607 m; 23.iii.2017; J. Duran leg.; *Magnolia grandiflora* (Magnoliaceae); MPUJ_ENT • 1 ♂, 1 ♀; same but 4.5971, −74.0829; 2606 m; 19.ix.2017; MPUJ_ENT.

Distribution. Colombia: Bogotá (Rendón-Mera et al. 2017), Mexico (Hodkinson 1990).

Host plant. *Magnolia grandiflora* L. (Magnoliaceae) (unpublished NHMB data from Mexico).

Calophyidae Vondráček, 1957

‡ *Calophya schini* Tuthill, 1959

Material examined. Antonio Nariño: • 1 ♀; Parque Ciudad Jardín; 4.5818, −74.0933; 2601 m; 13.iv.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 1 ♀; same but 4.5819, −74.0937; 2601 m; MPUJ_ENT • 58 ♂, 73 ♀; same but 4.5814, −74.0932; 2601 m; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 116 ♂, 104 ♀; same but 4.5816, −74.0931; 2600 m; MPUJ_ENT • 114 ♂, 159 ♀; same but 4.5817, −74.0931; 2602 m; MPUJ_ENT • 1 ♀; same but 4.5821, −74.0914; 2599 m; MPUJ_ENT • 45 ♂, 56 ♀; same but 4.5822, −74.0932; 2597 m; MPUJ_ENT. **Chapinero:** • 1 ♂, 6 ♀; Parque El Chicó; 4.673, −74.0452; 2599 m; 27.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 1 ♂, 2 ♀; Parque El Virrey; 4.6754, −74.0581; 2579 m; 25.ix.2017; J. Duran leg.; *Croton coriaceus* (Euphorbiaceae); MPUJ_ENT • 6 ♂, 5 ♀; same but 28.iii.2017; MPUJ_ENT • 2 ♂, 2 ♀; same but 4.6739, −74.0557; 2580 m; *Salix humboldtiana* (Salicaceae); MPUJ_ENT. **Rafael Uribe Uribe:** • 1 ♀; Parque Palermo Sur; 4.5412, −74.1100; 2698 m; 09.iv.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 10 ♂, 16 ♀; same but 4.5417, −74.1097; 2689 m; *Schinus areira* (Anacardiaceae); MPUJ_ENT. **San Cristóbal:** • 1 ♀; Parque La Victoria; 4.5546, −74.0954; 2757 m; 09.iv.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 4 ♂, 1 ♀; same but 4.5548, −74.0955; 2764 m; *Quercus humboldtii* (Fagaceae); MPUJ_ENT • 79 ♂, 92 ♀; same but 4.5546, −74.0953; 2759 m; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 31 ♂, 48 ♀; same but 4.5547, −74.0953; 2760 m; MPUJ_ENT • 3 ♂, 4 ♀; Parque San Cristóbal: 4.5735, −74.0832; 2639 m; 13.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 2 ♂, 3 ♀; same but 4.5736, −74.0834; 2638 m; MPUJ_ENT • 60 ♂, 17 ♀; same but 4.5736, −74.0827; 2642 m; MPUJ_ENT • 44 ♂, 37 ♀; Parque Villa de los Alpes; 4.5593, −74.0977; 2692 m; 13.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT. **Santa Fe:** • 4 ♂, 2 ♀; Parque Tercer Milenio; 4.5971, −74.0829; 2606 m; 19.ix.2017; J. Duran leg.; *Magnolia grandiflora* (Magnoliaceae); MPUJ_ENT • 1 ♂, 7 ♀; same but 4.7011, −74.0655; 2570 m; 23.iii.2017; *Schinus areira* (Anacardiaceae); MPUJ_ENT. **Usaquén:** • 1 ♀; CAI Santa Barbara; 4.693, −74.0311; 2601 m; 06.iv.2018; V. Ocampo leg.; *Quercus humboldtii* (Fagaceae); MPUJ_ENT • 4 ♂, 4 ♀; Parque Belmira; 4.7215, −74.0318; 2576 m; 02.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 1 ♂; Parque Cabañas del Norte; 4.7359, −74.0318; 2575 m; 16.iii.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 33 ♂, 27 ♀; same but 4.7359, −74.0317; 2574 m; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 102 ♂, 116 ♀; same but 4.7359, −74.0315; 2576 m; MPUJ_ENT • 19 ♂, 18 ♀; same but 4.7359, −74.0316; 2575 m; MPUJ_ENT • 48 ♂, 56 ♀; same but 4.736, −74.0317; 2571 m; MPUJ_ENT • 1 ♀; Parque Contador Norte; 4.7152, −74.0297; 2599 m; 02.iv.2018; V. Ocampo leg.; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT • 19 ♂, 21 ♀; Parque Ginebra-Bella Suiza; 4.7061, −74.0300; 2595 m; 06.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 13 ♂, 6 ♀; same but 4.7062, −74.0305;

2596 m; MPUJ_ENT • 55 ♂, 34 ♀; same but 4.7067, −74.0299; 2601 m; MPUJ_ENT • 2 ♂, 1 ♀; Parque La Francia; 4.6896, −74.0470; 2577 m; 05.iii.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 1 ♀; same but 4.6902, −74.0464; 2577 m; MPUJ_ENT • 1 ♀; same but 4.6906, −74.0464; 2575 m; MPUJ_ENT • 1 ♂, 1 ♀; same but 4.6908, −74.0466; 2577 m; MPUJ_ENT • 1 ♀; Parque Nueva Autopista; 4.7217, −74.0507; 2579 m; 05.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 1 ♀; Parque Usaquén 2; 4.691, −74.0323; 2586 m; 05.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 1 ♂; same but 4.691, −74.0320; 2591 m; 27.iv.2018; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT • 1 ♀; same but 4.6912, −74.0317; 2571 m; 05.iii.2018; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT. **Usme:** • 1 ♂, 1 ♀; Parque Chuniza-Famaco; 4.5018, −74.1086; 2775 m; 09.iv.2018; V. Ocampo leg.; *Quercus humboldtii* (Fagaceae); MPUJ_ENT • 158 ♂, 173 ♀; same but 4.5015, −74.1088; 2686 m; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 28 ♂, 31 ♀; same but 4.5018, −74.1087; 2774 m; MPUJ_ENT • 55 ♂, 44 ♀; same but 4.5031, −74.1100; 2759 m; MPUJ_ENT • 16 ♂, 15 ♀; same but 4.5032, −74.1097; 2761 m; MPUJ_ENT • 20 ♂, 18 ♀; same but 4.5036, −74.1101; 2754 m; MPUJ_ENT • 22 ♂, 29 ♀; Parque Virrey Sur; 4.5009, −74.1125; 2768 m; 23.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá (Pinzón and González 2002).—Probably originating from Bolivia or Peru, adventive elsewhere in the Americas, Africa, Europe, and New Zealand (Burckhardt et al. 2018).

Host plant. *Schinus areira* L. (Anacardiaceae) (Burckhardt et al. 2018).

Carsidaridae Crawford, 1911

Synoza cornutiventris Enderlein, 1918

Material examined. Antonio Nariño: • 4 ♂, 5 ♀; Parque Ciudad Jardín; 4.5818, −74.0932; 2601 m; 23.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT. **Chapinero:** • 2 ♀; Parque El Chicó; 4.6731, −74.0447; 2605 m; 27.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 6 ♂, 2 ♀; same but 4.6732, −74.0445; MPUJ_ENT • 1 ♂; Parque El Virrey; 4.6733, −74.0554; 2591 m; 28.iii.2017; J. Duran leg.; *Delostoma integrifolium* (Bignoniaceae); MPUJ_ENT. **Rafael Uribe Uribe:** • 2 ♂; Parque Palermo Sur; 4.5423, −74.1102; 2676 m; 09.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT. **San Cristóbal:** • 8 ♂, 7 ♀; Parque Primero de Mayo; 4.5734, −74.0882; 2625 m; 23.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 28 ♂, 24 ♀; same but 4.5738, −74.0879; 2622 m; 13.iv.2018; MPUJ_ENT • 25 ♂, 14 ♀; same but 4.5745, −74.0881; 2621 m; MPUJ_ENT • 1 ♀; same but 4.5746, −74.0880; 2621 m; *Quercus humboldtii* (Fagaceae); MPUJ_ENT • 1 ♂; Parque San Cristóbal: 4.5728, −74.0848; 2638 m; 13.iv.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 1 ♂; same but 4.5728, −74.0838; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 36 ♂, 24 ♀; Parque Villa de los Alpes; 4.5591, −74.0974; 2698 m; 23.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 11 ♂, 4 ♀; same but 4.5593, −74.0972; 2695 m; MPUJ_ENT • 11 ♂, 16 ♀; same but 4.5595, −74.0978; 2686 m; MPUJ_ENT • 1 ♀; same but 4.5621, −74.0982; 2676 m; 13.iv.2018; MPUJ_ENT • 4 ♂, 6 ♀; same but 4.5624, −74.0983; 2667 m; MPUJ_ENT • 4 ♂, 1 ♀; same but 4.5625, −74.0983; 2665 m; 13.iv.2018; MPUJ_ENT • 2 ♀; same but 4.5628, −74.0982; 2658 m; 23.iv.2018; MPUJ_ENT. **Santa Fe**: • 5 ♂, 1 ♀; Parque La Independencia; 4.6108, −74.0678; 2645 m;

27.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 12 ♂, 11 ♀; same but 4.6114, −74.0682; 2639 m; MPUJ_ENT • 1 ♂; same but 4.6116, −74.0687; 2631 m; MPUJ_ENT • 1 ♂; same but 4.6108, −74.0678; 2644 m; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT • 1 ♂; same but 4.6119, −74.0694; 2583 m; *Quercus humboldtii* (Fagaceae); MPUJ_ENT • 1 ♂; Parque Nacional; 4.6217, −74.0643; 2576 m; 27.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 3 ♀; same but 4.6242, −74.0640; 2624 m; MPUJ_ENT • 1 ♂; Parque Ilarco; 4.7008, −74.0657; 2569 m; 23.iii.2017; J. Duran leg.; *Croton coriaceus* (Euphorbiaceae); MPUJ_ENT. **Suba:** • 4 ♂, 5 ♀; Parque Canal Molinos; 4.6981, −74.0634; 2575 m; 23.iii.2017; J. Duran leg.; *Ficus americana* subsp. *andicola* (Moraceae); MPUJ_ENT. **Usaquén:** • 1 ♂, 1 ♀; Parque Altablanca; 4.7347, −74.0285; 2581 m; 16.iii.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 3 ♂, 2 ♀; Parque CAI Lisboa; 4.7085, −74.0290; 2604 m; 06.iv.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 1 ♀; same but 4.7088, −74.0292; 2599 m; MPUJ_ENT • 12 ♂, 5 ♀; Parque Cedro Madeira; 4.7268, −74.0313; 2574 m; 23.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 40 ♂, 24 ♀; Parque Contador Norte; 4.7127, −74.0312; 2594 m; 06.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 13 ♂, 13 ♀; same but 4.7129, −74.0312; 2601 m; MPUJ_ENT • 14 ♂, 13 ♀; same but 4.713, −74.0312; 2598 m; MPUJ_ENT • 1 ♂, 1 ♀; same but 4.7132, −74.0314; 2593 m; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT • 1 ♂; same but 4.7128, −74.0311; 2603 m; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 1 ♀; Parque Ginebra-Bella Suiza; 4.7067, −74.0298; 2601 m; 06.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 2 ♂, 2 ♀; Parque La Francia; 4.6899, −74.0466; 2579 m; 05.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 2 ♀; same but 4.6908, −74.0480; 2580 m; MPUJ_ENT • 2 ♂; same but 4.6905, −74.0475; 2581 m; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 21 ♂, 13 ♀; Parque La Vida; 4.7361, −74.0339; 2585 m; 16.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 39 ♂, 22 ♀; same but 4.7362, −74.0339; 2586 m; MPUJ_ENT • 32 ♂, 32 ♀; same but 4.7365, −74.0341; 2577 m; MPUJ_ENT • 12 ♂, 6 ♀; same but 4.7367, −74.0342; 2579 m; MPUJ_ENT • 17 ♂, 17 ♀; same but 4.7369, −74.0350; 2576 m; MPUJ_ENT • 23 ♂, 10 ♀; same but 4.737, −74.0344; 2573 m; MPUJ_ENT • 1 ♂, 5 ♀; same but 4.7371, −74.0352; 2572 m; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 1 ♂, 1 ♀; Parque Nueva Autopista; 4.7216, −74.0507; 2571 m; 05.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 1 ♂; same but 4.7217, −74.0507; 2579 m; MPUJ_ENT • 2 ♂, 2 ♀; Parque Usaquén 2; 4.691, −74.0323; 2586 m; 05.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 1 ♂; same but 4.6912, −74.0323; 2587 m; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT. **Usme:** • 7 ♂, 12 ♀; Parque Diana Turbay; 4.5478, −74.1015; 2672 m; 23.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 5 ♂, 10 ♀; same but 4.5483, −74.1013; MPUJ_ENT • 14 ♂, 8 ♀; Parque La Andrea; 4.5098, −74.1109; 2741 m; 09.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 39 ♂, 32 ♀; same but 4.5098, −74.1109; 2701 m; MPUJ_ENT • 6 ♂, 7 ♀; Parque Virrey Sur; 4.5009, −74.1115; 2779 m; 23.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 4 ♀; same but 4.5012, −74.1113; 2780 m; MPUJ_ENT • 4 ♂, 1 ♀; same but 4.5013, −74.1114; 2781 m; MPUJ_ENT • 4 ♂, 3 ♀; same but 4.5014, −74.1116; 2778 m; MPUJ_ENT.

Distribution. Colombia: Bogotá, Cundinamarca, Meta (Brown and Hodkinson 1988; Rendón-Mera et al. 2017), Costa Rica, Panama, and Peru (Brown and Hodkinson 1988; Hollis 2000).

Host plant. *Ficus hartwegii* Miq. (Moraceae) (Hollis 2000). Several adults were collected in the present study on *Ficus americana* subsp. *andicola* (Standl.) C.C.Berg. This species has to be confirmed as host. Many adults were collected on unidentified *Ficus* trees. It is possible that these also constitute hosts, but they should be identified to species and examined for psyllid immatures for further conclusions.

Liviidae Löw, 1879

* *Melanastera* sp.

Material examined. Chapinero: • 1 ♀; Quebrada La Vieja; 4.6474, −74.0447; 2785 m; 20.vi.2017; J. Duran leg.; *Miconia elaeoides* (Melastomatacea); MPUJ_ENT.

Distribution. Colombia: Bogotá.

Host plant. Unknown.

Comments. The single female appears to belong to an undescribed species of *Melanastera*, a predominantly Neotropical genus associated with Melastomataceae, Annonaceae, and other plant families (Burckhardt et al. 2024). This is the first record of the genus from Colombia.

Mastigimatidae Bekker-Migdisova, 1973

Mastigimas colombianus Burckhardt, Queiroz & Drohojowska, 2013

Fig. 3A–G

Material examined. Chapinero: • 17 ♂, 17 ♀; Parque El Virrey; 4.6728, −74.0533; 2581 m; 28.iii.2017; J. Duran leg.; *Cedrela montana* (Meliaceae); MPUJ_ENT • 2 ♂, 2 ♀; same but NMHB • 2 ♂, 2 ♀; same but slide mounted; NMHB. **Santa Fe:** • 1 ♂; Parque Ilarco; 4.7008, −74.0657; 2569 m; 23.iii.2017; J. Duran leg.; *Croton coriaceus* (Euphorbiaceae); MPUJ_ENT. **Suba:** • 9 ♂, 6 ♀; Parque Canal Molinos; 4.6976, −74.0637; 2575 m; 10.vii.2017; J. Duran leg.; *Cedrela montana* (Meliaceae); MPUJ_ENT • 1 ♂, 1 ♀; same but 03.x.2017; MPUJ_ENT. **Usaquén:** • 1 ♀; Parque Cabañas del Norte; 4.7358, −74.0315; 2578 m; 16.iii.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT.

Redescription. *Colouration*. Male (Fig. 3A) dark yellow with dark brown markings. Vertex with pale brown longitudinal stripe along lateral and anterior margins on either side; discal foveae with dark brown spot; margin of toruli brown. Genal processes and clypeus whitish. Antennal segments 1 and 2 yellow, segment 3 yellow basally, gradually darkening to dark brown apex, segments 4–10 dark brown. Pronotum whitish with lateral sutures brown. Mesopraescutum pale yellow along posterior margins. Mesoscutum with two dark yellow longitudinal stripes on either side, the outer one black posteriorly. Mesoscutellum and metascutellum whitish. Metapostnotum with dark brown spots medially and laterally. Pleura whitish, propleurites black dorsally. Mesosternum brown. Forewing colourless, with black spot at base of C+Sc and basally on anal cell; veins and pterostigma brown. Fore and mid legs with femur dark yellow, tibia and tarsi brown; hind leg with femur dark brown, tibia and tarsi pale yellow. Abdomen brown with yellow spot medially, narrowing to apex; intersegmental membrane straw-coloured. Terminalia dark brown, parameres black, subgenital plate pale yellow dorsally.—Female (Fig. 3B) yellow with only a few black markings. Discal

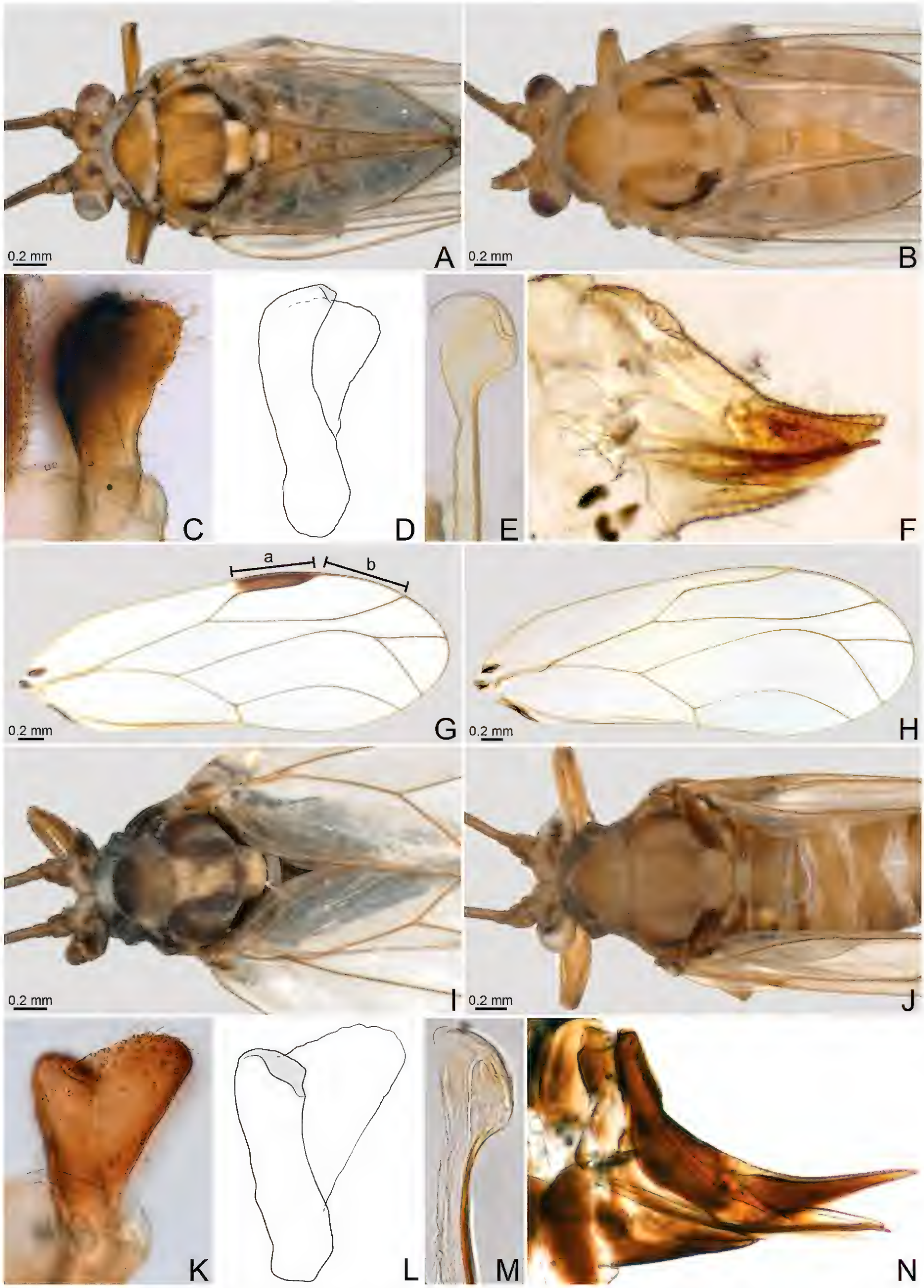

Figure 3. **A–G** *Mastigimas colombianus* Burckhardt, Queiroz & Drohojowska, 2013 **H–N** *Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. **A, I** male, dorsal view **B, J** female, dorsal view **C, K** paramere, outer surface, lateral view **D, L** paramere, inner surface, lateral view **E, M** distal segment of aedeagus, lateral view **F, N** female terminalia, lateral view **G, H** forewing.

foveae dark yellow. Pronotum with lateral indentations dark yellow. Meso- and metanotum as in male but markings dark yellow, with outermost stripes on mesoscutum black posteriorly. Forewing as in male but pterostigma colourless. Pleura as in male. Fore and mid legs with femora pale yellow, tibiae dark yellow, and tarsi brown, hind leg pale yellow. Terminalia yellow, apex of proctiger black.

***Structure*.** Antenna 4.0–4.1× as long as head width; segment 3 1.3–1.4× as long as segment 4. Forewing (Fig. 3G) 4.5–5.3× as long as head width, and 2.6× as long as wide, pterostigma long and narrow, ratio a/b 0.9–1.0, cell cu_1 long and flat, length/height ratio 3.3.

***Terminalia*.** Male. Paramere (Fig. 3C, D) bifid, clavate, outer lobe rounded anteriorly and angular posteriorly. Apical dilatation of aedeagus with small blunt apico-ventral hook (Fig. 3E), 1.2× as long as paramere.—Female (Fig. 3F). Terminalia short and cuneate, dorsal outline of proctiger slightly concave; proctiger as long as head width, and 2.4× as long as subgenital plate.

Measurements (in mm). BL 2 ♂ 3.6–5.0 (4.36±0.74), 2 ♀ 5.3–5.4 (5.31±0.08); HW ♂ 0.85, ♀ 0.82; AL ♂ 3.44, ♀ 3.39; FL ♂ 3.8, ♀ 4.36; FW ♂ 1.47, ♀ 1.67; PL ♂ 0.24; DL ♂ 0.28; FP ♀ 0.8; FS ♀ 0.34.

Distribution. Colombia: Bogotá (Burckhardt et al. 2013).

Host plant. Most adults (types and material at hand) were collected on *Cedrela montana* Turcz. (Meliaceae). *Mastigimas* species develop, as far as known, on *Cedrela*, suggesting that *C. montana* is a host.

Comments. *Mastigimas colombianus* was described from two males and two females collected in Bogotá (Burckhardt et al. 2013). As more material is available from this study, a redescription of the species is provided here. The females in the material at hand fit the original description perfectly but the male paramere is slightly variable with respect to the shape of the outer lobe. As in the two type specimens, the paramere in the material at hand is strongly sclerotised which seems characteristic for the species.

* *Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.

https://zoobank.org/7AED528B-ED19-4544-96D1-15488A4D5A2F

Fig. 3H–N

Type locality. Colombia, Bogotá: Suba, Parque Canal Molinos, 4.6976389, −74.063694, 2575 m.

Type material. *Holotype*: Colombia • ♂, pinned; Bogotá, Suba, Parque Canal Molinos; 4.6976389, −74.063694; 2575 m; 03.x.2017; J. Duran leg; on *Cedrela montana* (Meliaceae); MPUJ_ENT0074272. ***Paratypes*: Chapinero:** • 6 ♂, 7 ♀; Parque El Virrey; 4.6728, −74.0533; 2581 m; 28.iii.2017; J. Duran leg.; *Cedrela montana* (Meliaceae); MPUJ_ENT. **Santa Fe:** • 2 ♀; Parque Tercer Milenio; 4.5974, −74.0835; 2605 m; 23.iii.2017; J. Duran leg.; *Sambucus nigra* (Viburnaceae); MPUJ_ENT. **Suba:** • 8 ♂, 3 ♀; Parque Canal Molinos; 4.6976, −74.0637; 2575 m; 10.vii.2017; J. Duran leg.; *Cedrela montana* (Meliaceae); MPUJ_ENT • 11 ♂, 13 ♀; same data as for holotype • 1 ♂, 1 ♀; same data as for holotype but NHMB • 1 ♂, 1 ♀; same data as for holotype but slide mounted; NHMB. **Usaquén:** • 1 ♀; Parque Cabañas del Norte; 4.7363, −74.0317; 2575 m; 16.iii.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 1 ♂; Parque Gine-

bra-Bella Suiza; 4.7061, −74.0304; 2596 m; 06.iv.2018; V. Ocampo leg.; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT • 2 ♂; same but 4.7062, −74.0305; *Schinus areira* (Anacardiaceae); MPUJ_ENT.

Diagnosis. Forewing (Fig. 3H) with pterostigma long and narrow, ratio a/b 1.2 Antennal segment 3 approx. as long as segment 4. Paramere (Fig. 3K, L) bifid, irregularly triangular, strongly widening to apex. Aedeagal head lacking apico-ventral hook. Female terminalia (Fig. 3N) elongate, falcate; proctiger 1.0–1.2× as long as head width.

Description. ***Colouration*.** Male (Fig. 3I) dark brown. Head pale yellow; vertex with pale brown longitudinal stripe along lateral and anterior margins on either side; discal foveae with dark brown spot, sometimes much expanded; margin of toruli brown. Genal processes and clypeus whitish. Antennae yellowish brown. Pronotum whitish with lateral quarter dark brown. Mesopraescutum with dark brown polygon-shaped spot anteriorly. Mesoscutum with two dark brown longitudinal stripes on either side. Mesoscutellum and metascutellum whitish. Metapostnotum dark brown. Pleura whitish, with dark brown markings dorsally. Mesosternum dark brown. Forewing colourless, with brown spot at base of C+Sc and base of anal cell; veins yellow; pterostigma dark brown or yellowish brown. Fore and mid legs brown and yellowish brown, metafemur and base of metatibia dark brown, rest of hind leg pale yellow. Abdomen dark brown; intersegmental membrane straw-coloured. Terminalia dark brown, parameres sometimes dark yellow.—Female (Fig. 3J) yellow. Discal foveae dark brown; margin of toruli brown. Pronotum with lateral indentations brown. Tergum as in male but markings dark yellow on mesopraescutum and brownish on mesoscutum, with outermost stripe dark brown posteriorly. Forewing as in male but pterostigma colourless. Pleura and legs as in male. Abdominal sclerites usually brown laterally. Terminalia yellow, brown apically, proctiger sometimes completely brown.

***Structure*.** Conforms to the generic description of Brown and Hodkinson (1988). Antenna 4.3–4.5× as long as head width; segment 3 1.1–1.3× as long as segment 4. Forewing (Fig. 3H) 4.8–5.2× as long as head width, and 2.6–2.7× as long as wide, pterostigma long and narrow, ratio a/b 1.1–1.2, cell cu_1 long and flat, length/height ratio 3.5–3.8.

***Terminalia*.** Paramere (Fig. 3K, L), bifid, in lateral view irregularly triangular, strongly widening to apex. Apical dilatation of aedeagus lenticular (Fig. 3M), 1.5× as long as paramere.—Female terminalia (Fig. 3N) elongate, falcate; proctiger 1.5× as long as head width, and 1.9× as long as subgenital plate.

Measurements (in mm). BL ♂ 4.8, 2 ♀ 5.8–5.9 (5.85±0.1); HW ♂ 0.88, ♀ 0.92; AL ♂ 3.95, ♀ 3.93; FL ♂ 4.23, ♀ 4.78; FW ♂ 1.57, ♀ 1.85; PL ♂ 0.24; DL ♂ 0.36; FP ♀ 1.26; FS ♀ 0.65.

Etymology. From Latin *longus* = long, and *caudatus* = bearing a tail, referring to the long female terminalia. Adjective.

Distribution. Colombia: Bogotá.

Host plant. Most of the examined adults were collected on *Cedrela montana* Turcz. (Meliaceae). *Mastigimas* species develop, as far as known, on *Cedrela*, suggesting that *C. montana* is a host.

Comments. *Mastigimas longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. resembles *M. anjosi* Burckhardt et al., 2011 (known from Brazil, Trinidad, and Venezuela) in the irregularly triangular paramere and the elongate, falcate female terminalia; it differs in the antennal segment 3 approx.

as long as segment 4 (instead of twice as long), and the aedeagal head lacking an apico-ventral hook (Burckhardt et al. 2011, 2013). The falcate female terminalia are shared also with *M. drepanodis* Burckhardt, Queiroz & Drohojowska, 2013 (Brazil) which differs in the slenderer paramere (Burckhardt et al. 2013). In the key by Burckhardt et al. (2013), the new species keys out with *M. colombianus* from which it differs in details of the male and female terminalia.

Psyllidae Latreille, 1807

‡ *Acizzia acaciaebaileyanae* (Froggatt, 1901)

Material examined. Suba: • 1 ♂, 3 ♀; Cerro La Conejera; 4.7705, −74.0656; 2620 m; 28.iii.2017; J. Duran leg.; *Acacia dealbata* (Fabaceae); MPUJ_ENT • 1 ♀; Parque Ilarco; 4.701, −74.0663; 2567 m; 23.iii.2017; J. Duran leg.; *Bocconia frutescens* (Papaveraceae); MPUJ_ENT • 1 ♂; same but 10.vii.2017; MPUJ_ENT. **Usaquén:** • 1 ♂; Parque Belmira; 4.7215, −74.0318; 2576 m; 02.iv.2018; V. Ocampo leg.; *Schinus areira* (Anacardiaceae); MPUJ_ENT • 5 ♂; Parque Cabañas del Norte; 4.7358, −74.0315; 2578 m; 16.iii.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 1 ♂, 1 ♀; Parque Contador Norte; 4.7158, −74.0322; 2581 m; 06.iv.2018; V. Ocampo leg.; *Lafoensia acuminata* (Lythraceae); MPUJ_ENT • 1 ♂; same but 4.715, −74.0301; 2597 m; 02.iv.2018; *Liquidambar styraciflua* (Altingiaceae); MPUJ_ENT • 1 ♀; same but 4.7151, −74.0299; 2600 m; MPUJ_ENT.

Distribution. Colombia: Bogotá (Rendón-Mera et al. 2017).—Native to Australia, adventive in Africa, North America, Asia, Europe, and New Zealand (Ouvrard 2023).

Host plant. *Acacia* Mill. and *Samanea* (Benth.) Merr. spp. (Fabaceae) (Ouvrard 2023).

‡ *Acizzia uncatoides* (Ferris & Klyver, 1932)

Material examined. Chapinero: • 9 ♂, 10 ♀; Parque El Virrey; 4.6713, −74.0504; 2591 m; 28.iii.2017; J. Duran leg.; *Acacia melanoxylon* (Fabaceae); MPUJ_ENT • 18 ♂, 10 ♀; same but 4.6753, −74.0581; 2579 m; *Magnolia grandiflora* (Magnoliaceae); MPUJ_ENT • 1 ♀; same but 4.6738, −74.0563; 2581 m; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 1 ♂; Quebrada La Vieja; 4.6495, −74.0466; 2764 m; 06.iv.2017; J. Duran leg.; *Piper bogotense* (Piperaceae); MPUJ_ENT. **Rafael Uribe Uribe:** • 1 ♂; Parque Palermo Sur; 4.542, −74.1089; 2692 m; 09.iv.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT. **Santa Fe:** • 9 ♂, 6 ♀; Universidad Distrital; 4.5991, −74.0656; 2695 m; 19.ix.2017; J. Duran leg.; *Acacia decurrens* (Fabaceae); MPUJ_ENT • 1 ♂, 1 ♀; same but 4.5986, −74.0656; 2702 m; 05.v.2017; *Acacia melanoxylon* (Fabaceae); MPUJ_ENT • 71 ♂, 52 ♀; same but 4.5987, −74.0667; 2667 m; 19.ix.2017; MPUJ_ENT • 1 ♂, 1 ♀; same but 4.5983, −74.0654; 2712 m; 05.v.2017; *Croton coriaceus* (Euphorbiaceae); MPUJ_ENT • 10 ♂, 14 ♀; same but 4.5985, −74.0655; 2704 m; *Lycianthes lycioides* (Solanaceae); MPUJ_ENT • 1 ♂; same but 4.5989, −74.0656; 2701 m; *Oreopanax incisus* (Araliaceae); MPUJ_ENT • 1 ♂; same but 4.5987, −74.0653; 2713 m; *Quercus humboldtii* (Fagaceae); MPUJ_ENT. **Suba:** • 2 ♀; Cerro La Conejera; 4.7718, −74.0648; 2622 m; 10.vii.2017; J. Duran leg.; *Acacia melanoxylon* (Fabaceae); MPUJ_ENT • 1 ♂; same but 4.7695, −74.0527; 2674 m; 03.x.2017; *Quercus humboldtii* (Fagaceae); MPUJ_ENT. **Us-**

aquén: • 1 ♂; Parque CAI Lisboa; 4.7088, −74.0292; 2599 m; 06.iv.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT • 1 ♂; same but 4.7094, −74.0291; 2590 m; MPUJ_ENT.

Distribution. Colombia: Bogotá, Cundinamarca, Huila (Rendón-Mera et al. 2017).—Native to Australia, adventive in Africa, the Americas, Asia, Europe, North Africa, and New Zealand (Ouvrard 2023).

Host plant. *Acacia* Mill. and *Albizia* A. ex Benth. (Fabaceae) (Halbert and Burckhardt 2020); in this survey several adults were collected on *Acacia decurrens* (J.C.Wendl.) Willd. and *A. melanoxylon* R.Br. While the latter is confirmed in the literature as host, the former is not. Further studies will be necessary to find out whether *A. decurrens* serves as host to *A. uncatoides*.

Platycorypha sp.

Material examined. Santa Fe: • 1 ♀; Parque Ilarco; 4.7008, −74.0657; 2569 m; 23.iii.2017; J. Duran leg.; *Croton coriaceus* (Euphorbiaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá, Magdalena (Rendón-Mera et al. 2017).

Host plant. Unknown. The single female at hand was collected on *Croton*, an unlikely host as all *Platycorypha* species, for which hosts are known, develop on Fabaceae (Burckhardt and Queiroz 2020).

Comments. The single female at hand resembles specimens reported as *Platycorypha erythrinae* (Lizer) from Panama (Brown and Hodkinson 1988) and Peru (Burckhardt 1987). These specimens are probably not conspecific with *P. erythrinae* from Argentina, Brazil, Paraguay, and Uruguay, but represent an undescribed species. The specimens from Colombia, Panama and Peru differ from the latter in the presence of distinct brown dots on the radular areas of the forewing and the small hook on the apex of the female proctiger. More material is required for solving this issue.

Tuthillia latipennis Hodkinson, Brown & Burckhardt, 1986

Material examined. Suba: • 1 ♀; Cerro La Conejera; 4.7718, −74.0651; 2631 m; 03.x.2017; J. Duran leg.; *Myrcianthes leucoxyla* (Myrtaceae); MPUJ_ENT. **Engativá:** • 1 ♂; Jardín Botánico de Bogotá; 4.6666, −74.0993; 2553 m; 16.x.2019; S. Vargas leg.; *Myrcianthes* sp. (Myrtaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá (Rendón-Mera et al. 2017), Costa Rica, Panama (Brown and Hodkinson 1988; Hollis 2000).

Host plant. *Myrcianthes fragrans* (Sw.) McVaugh (Myrtaceae) (Hollis 2000). If *Myrcianthes leucoxyla* (Ortega) McVaugh, on which one female was collected, also constitutes a host, needs further observations.

Triozidae Löw, 1879

Calinda gibbosa (Tuthill, 1959)

Material examined. Santa Fe: • 1 ♂, 2 ♀; Universidad Distrital; 4.5995, −74.0664; 2673 m; 19.ix.2017; J. Duran leg.; *Baccharis latifolia* (Asteraceae); MPUJ_ENT

• 1 ♀; same but 4.5997, −74.0653; 2692 m; *Quercus humboldtii* (Fagaceae); MPUJ_ENT. **Suba:** • 1 ♀; Cerro La Conejera; 4.7702, −74.0664; 2634 m; 10.vii.2017; J. Duran leg.; *Baccharis* sp. (Asteraceae); MPUJ_ENT.

Distribution. Colombia: Antioquia, Bogotá, Boyacá, Cundinamarca, Nariño (Olivares and Burckhardt 1997; Rendón-Mera et al. 2017), Cuba, Ecuador, Peru, Venezuela (Olivares and Burckhardt 1997).

Host plant. *Baccharis latifolia* Pers. (Asteraceae) (Olivares and Burckhardt 1997).

* *Calinda trinervis* Olivares & Burckhardt, 1997

Material examined. Santa Fe: • 1 ♀; Universidad Distrital; 4.5995, −74.0664; 2673 m; 19.ix.2017; J. Duran leg.; *Baccharis latifolia* (Asteraceae); MPUJ_ENT.

Distribution. Colombia: Bogotá, Costa Rica, Panama (Olivares and Burckhardt 1997).

Host plant. Unknown. Adults from Colombia were collected on *Baccharis latifolia* Pers. and adults from Costa Rica on *B. trinervis* Pers. (Asteraceae). Both should be checked to determine whether they are hosts.

Comments. *Calinda trinervis* is reported here for the first time from Colombia.

Calinda sp.

Material examined. Santa Fe: • 1 ♀; Parque Ilarco; 4.7008, −74.0657; 2569 m; 23.iii.2017; J. Duran leg.; *Croton coriaceus* (Euphorbiaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá.

Host plant. Unknown.

Comments. The single female at hand represents probably an undescribed species. It shares the following characters with *Calinda albonigra* Olivares & Burckhardt, 1997 and *C. gladiformis* Olivares & Burckhardt, 1997: antenna shorter than 1.2 mm; forewing lacking surface spinules in distal 1/2; apical projection of proctiger well delimited from base, not inflated, straight, pointed apically, with well-defined teeth along dorsal margin; subgenital plate long; valvula dorsalis long; ventral saw of valvula ventralis not well delimited at base. From the former it differs in the relatively longer processes on the proctiger and subgenital plate. From the latter it differs in the relatively shorter apical process of the proctiger and the presence of a small ventral hump in the basal 1/3 of the subgenital plate.

* *Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov.

https://zoobank.org/B778B877-DF95-4CAD-9A27-D325DE459AF0

Fig. 4

Type locality. Colombia, Bogotá: Santa Fe, Parque Tercer Milenio, 4.70025, −74.0654667, 2569 m.

Type material. *Holotype*: Colombia • ♂, pinned; Bogotá, Santa Fe, Parque Tercer Milenio; 4.70025, −74.0654667; 2569 m; 19.ix.2017; J. Duran leg.; on *Clusia* sp. (Clusiaceae); MPUJ_ENT0074271. ***Paratypes*: Santa Fe**: • 28 ♂, 23 ♀; same data

as for holotype but 4.7003, −74.0655; MPUJ_ENT • 1 ♂, 1 ♀; same data as for preceding but NHMB • 1 ♂, 1 ♀; same data as for preceding but slide mounted; NHMB • 4 ♂, 4 ♀; same data as for preceding but in ethanol 70%; NHMB • 19 ♂, 11 ♀; same data as for preceding but 27.vi.2017; MPUJ_ENT • 1 ♂; same data as for preceding but 4.5989, −74.0814; 2607 m; *Prunus serotina* (Rosaceae); MPUJ_ENT.

Diagnosis. Mesonotum with white longitudinal stripe (Fig. 4B). Forewing (Fig. 4C) with three brown transverse bands as follows: one along vein R_1, base of cells r_2 and m_2, vein Cu_1 and apex of cell cu_2 adjacent to vein Cu_{1b}, one from subapex of cell r_1, through approx. middle of r_2 and m_2, to radular spinules of cu_1, and one from subapex of r_2, through base of m_1 to radular spinules of m_2; clavus brown along A_1 distal to apex of Cu_2. Paramere (Fig. 4E, F) with apical process short and posterior margin with apical 1/2 sinuous. Female proctiger (Fig. 4H) with apical portion relatively slender.

Description. ***Colouration*.** Head, pronotum and pleura white, rest of notum and abdomen dark brown (Fig. 4A, B). Vertex with dark brown longitudinal stripes adjacent to eyes, curving inwards distal to torulus; anterior margin usually brownish; discal foveae dark brown; margin of toruli brown. Genal process sometimes slightly darker apically. Antennal segments 1–8 pale-yellow, 9–10 black. Clypeus white, slightly brown posteriorly. Pronotum with two brown longitudinal stripes medially; sublateral and lateral indentations dark brown. Mesopraescutum and mesoscutum with white longitudinal stripe medially. Forewing membrane (Fig. 4C) colourless, with three brown transverse bands as follows: one along vein R_1, base of cells r_2 and m_2, vein Cu_1 and apex of cell cu_2 adjacent to vein Cu_{1b}, one from near apex of cell r_1, through approx. middle of r_2 and m_2, to radular spinules of cu_1, and one from near apex of r_2, through base of m_1 to radular spinules of m_2; clavus brown along A_1 distal to apex of Cu_2; veins yellow, brown within the colour pattern; radular spinules brown. Fore, mid legs and metafemur brown, rest of hind leg yellow with apicotarsus brown. Abdominal basal sternites white or yellow medially; intersegmental membrane straw-coloured. Male terminalia dark brown. Female terminalia brown dorsally and ventrally, yellow apically.

***Structure*.** Genal processes (Fig. 4A) 1.1–1.3× as long as vertex along midline, subcylindrical, slightly narrowing apically, sometimes slightly curved outwards, divergent; apex rounded. Antenna 3.1–3.6× as long as head width; longest terminal seta 3.5–4.0× as long as short seta, and 0.6–0.8× as long as segment 10. Labium with apical segment 0.3–0.4× as long as medial segment. Forewing (Fig. 4C) 5.2–5.6× as long as head width, and 2.5–2.6× as long as wide, obovate with angular apex; vein C+Sc evenly curved; vein Rs straight; vein M 2.1–2.3× as long as M_{1+2}, bifurcating after imaginary line between apices of veins Rs and Cu_{1a}; vein M_{1+2} reaching wing margin approximately at imaginary line through trifurcation of vein R+M+Cu and bifurcation of vein M; vein Cu 1.3–1.4× as long as R, and 1.6–1.8× as long as Cu_{1b}; cell r_1 approx. as wide as the narrowest section of r_2. Surface spinules widely spaced (Fig. 4D), covering m_1, cu_1, and cu_2, and colour pattern on r_2 and m_2. Radular spinules forming triangular fields. Metafemur with six or seven apical bristles; metatibia 1.2–1.4× as long as head width.

***Terminalia*.** Male proctiger, in lateral view, subconical; apex constricted at anterior margin; anus large, occupying most part of apex, obliquely blunt. Paramere, in lateral view (Fig. 4E, F), 0.9× as long as proctiger; apical process short; bearing posterior lobe; anterior margin sinuous, concave submedially; posterior margin strong-

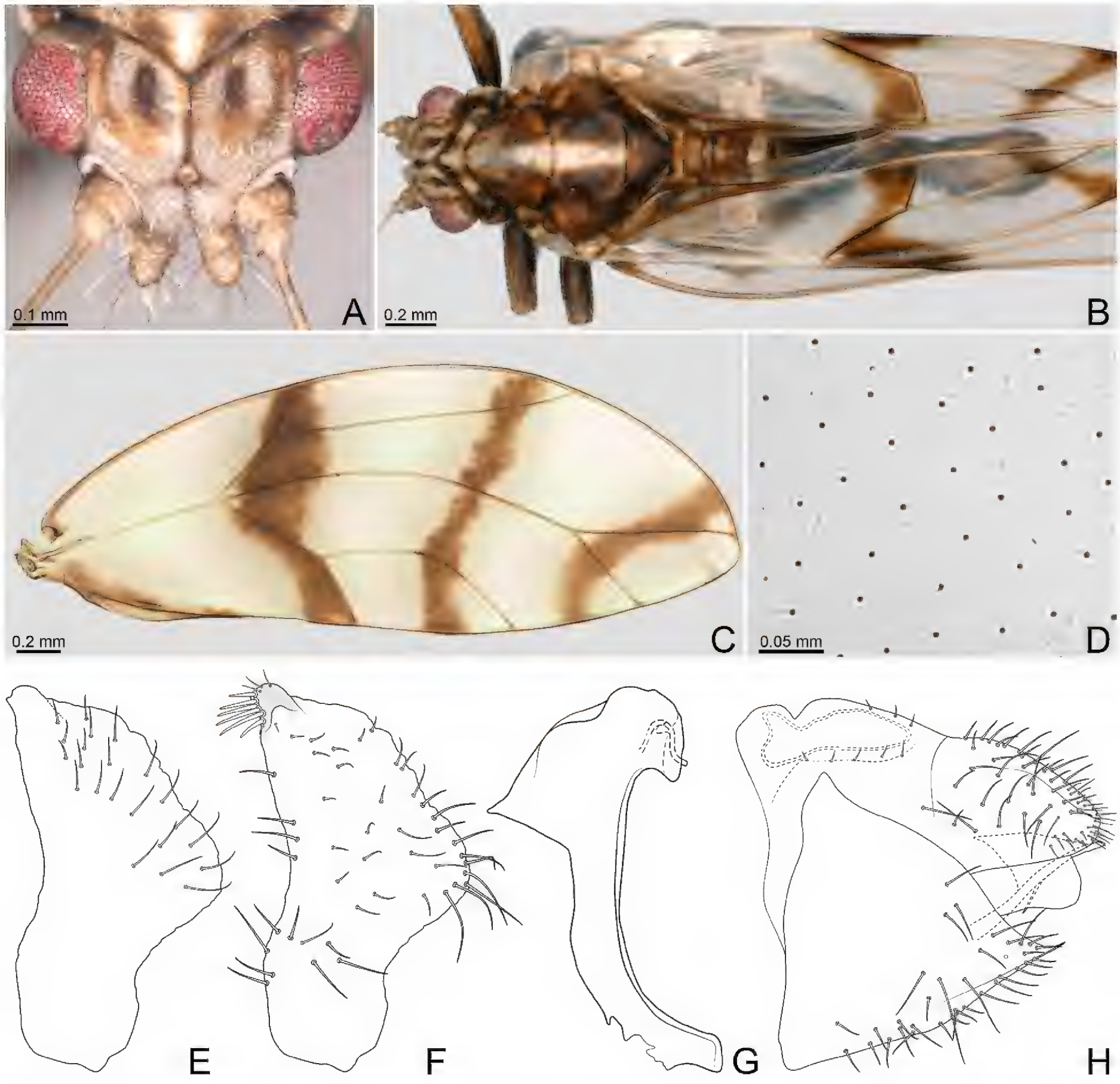

Figure 4. *Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. **A** head, dorsal view **B** habitus, dorsal view **C** forewing **D** surface spinules **E–G** male terminalia, lateral view **E** paramere, outer surface **F** paramere, inner surface **G** distal segment of aedeagus **H** female terminalia, lateral view.

ly irregular, concave in basal 1/3, strongly convex in median 1/3, sinuous in apical 1/3; outer surface (Fig. 4E) covered in medium long setae along posterior apical 1/2; inner surface (Fig. 4F) covered in short setae medially, long setae along anterior and posterior margins, and thick bristles anteriorly on apical tooth. Apical dilatation of aedeagus (Fig. 4G) with ventral extension beak-like, short; apically slightly convex, with small subapical hump; sclerotised end tube of ductus ejaculatorius short, weakly sinuate.—Female proctiger (Fig. 4H), in lateral view, 0.9× as long as head width; apical portion ~ 1/2 proctiger length; dorsal outline weakly incised at transverse groove, apical portion relatively slender, apex blunt; covered in long setae laterally, medium long setae dorsally, and short setae apically. Circumanal ring 0.4× as long as proctiger. Subgenital plate (Fig. 4H), in lateral view, 0.8× as long as proctiger; ventral outline straight in basal 1/2, weakly angular in the middle, straight in apical 1/2; sparsely covered in long setae, mostly ventrally and apically.

Measurements (in mm). BL 2 ♂ 3.7–4.1 (3.8±0.31), 2 ♀ 4.4–4.7 (4.79±0.37); HW ♂ 0.63, ♀ 0.67; VL ♂ 0.19, ♀ 0.18; GL ♂ 0.21, ♀ 0.23; AL ♂ 2.2, ♀ 1.78; LAB2 ♂ 0.22, ♀ 0.27; LAB3 ♂ 0.09, ♀ 0.09; FL ♂ 3.36, ♀ 3.46; TL ♂ 0.85, ♀ 0.78; MP 0.29; PL 0.26; FP 0.57; CRL 0.21; AP 0.25; SP 0.47.

Etymology. From Latin *albus* = white, and *linea* = line, referring to the contrasting longitudinal white stripe on the mesonotum. Noun in the ablative case.

Distribution. Colombia: Bogotá.

Host plant. Unknown. Many adults were collected on *Clusia* sp. (Clusiaceae) in the same area suggesting it is a host rather than just a casual plant. Further studies are necessary to to check this assumption.

Comments. *Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. resembles *L. inusitata* (Tuthill, 1944) (known from Costa Rica, Mexico, and Panama) in the brown body colour with white head and pleura, and white longitudinal stripe on mesonotum. It differs in the forewing pattern, the obovate forewing (vs ovate), the paramere with short (vs long) apical process and sinuous (vs concave) apical 1/2 of posterior margin, the aedeagal head with a weakly sinuous apical margin (vs evenly convex), and the female proctiger with a relatively slender apical portion (vs massive). In the key of Brown and Hodkinson (1988), *L. albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. keys out with *L. inusitata*. In the key of Burckhardt (1988), the species keys out in couplet 4 with *L. digitulata* Burckhardt, 1988 (Paraguay) and *L. fagarae* Burckhardt, 1988 (Brazil, Ecuador, Mexico, Paraguay, USA), from which it differs in the forewing pattern with three brown transverse bands (vs restricted to anal margin or completely or almost completely covering the entire membrane).

*** Triozidae gen. sp. 1**

Material examined. Engativá: • 1 ♂; Jardín Botánico de Bogotá; 4.6666, −74.0993; 2553 m; 16.x.2019; S. Vargas leg.; *Myrcianthes* sp. (Myrtaceae); MPUJ_ENT. **Suba:** • 1 ♂; Cerro La Conejera; 4.7695, −74.0527; 2674 m; 03.x.2017; J. Duran leg.; *Quercus humboldtii* (Fagaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá.

Host plant. Unknown.

Comments. The two males at hand probably represent an undescribed species. More material is required for a proper identification.

*** Triozidae gen. sp. 2**

Material examined. Rafael Uribe Uribe: • 1 ♀; Parque Palermo Sur; 4.5413, −74.1097; 2692 m; 09.iv.2018; V. Ocampo leg.; *Pittosporum undulatum* (Pittosporaceae); MPUJ_ENT.

Distribution. Colombia: Bogotá.

Host plant. Unknown.

Comments. The single female at hand fits in the *Trioza psyllihabitus* species group of Brown and Hodkinson (1988). More material is required for a species identification.

*** Triozidae gen. sp. 3**

Material examined. Santa Fe: • 1 ♂; Universidad Distrital; 4.5987, −74.0653; 2713 m; 27.vi.2017; J. Duran leg.; *Quercus humboldtii* (Fagaceae); MPUJ_ENT. **Usaquén:** • 1 ♀; Parque Ginebra-Bella Suiza; 4.706, −74.0302; 2591 m; 06.iv.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT • 1 ♀; Parque La Vida; 4.7362, −74.0339; 2586 m; 16.iii.2018; V. Ocampo leg.; *Ficus* sp. (Moraceae); MPUJ_ENT.

Distribution. Colombia: Bogotá.

Host plant. Unknown.

Comments. The three specimens share the conspicuous dark longitudinal stripe on the forewing with species of *Triozoida* Crawford, 1911, a feature also found in other unrelated species of Triozidae (unpublished NHMB data). More material is required for a species identification.

Discussion and conclusions

During the survey of the arthropod fauna of 33 UGS in Bogotá between 2017 and 2019, 3,825 adult specimens of 21 psyllid species of seven families were found, seven species of which could be identified only to genus. Psyllids were found in all UGS ranging from 1–8 species per UGS. The UGS with the highest number (8 spp.) is Parque Ilarco, followed by Parque El Virrey (7 spp.), Parque Cabañas del Norte (5 spp.) and Universidad Distrital (Pueblo Viejo) (5 spp.) (Table 1). Parque El Virrey serves as a "contemplative" park while the other three UGS are designed for different purposes, primarily recreational use, and two of them, viz. Parque Ilarco and Parque Cabañas del Norte, are small parks with an area of less than 1 hectare each (Alcaldía Mayor de Bogotá 2021, 2022). At first sight this may be surprising, and one would expect that larger UGS specifically designed for conservation purposes would support the largest number of psyllid species. As psyllids are host specific, the presence of the host is the most important factor allowing the occurrence of psyllid species at a particular place. Local psyllid diversity usually reflects local host diversity.

The number of 21 species found during the survey is high in comparison to the number of taxa previously reported from Colombia: 34 identified species plus ten species identified only to genus (Pinzón et al. 2002; Rendón-Mera et al. 2017). This high percentage is, however, an artefact of the poor knowledge of the psyllid fauna of Colombia. From Brazil, whose psyllid diversity is slightly better known than that of Colombia, 163 species have been recorded (Burckhardt and Queiroz 2023). However, the actual number of species is likely to be in excess of 1000 (Burckhardt and Queiroz 2020). Comparing the number of plant species of the two countries with 44,000 species in Brazil and 37,000 species in Colombia (Flora e Funga do Brasil 2023; SiB Colombia 2023), it is reasonable to expect several hundreds of psyllid species in Colombia. The presence of previously undescribed species and the high percentage (38%) of species identified only to genus is a further indication of the hazy state of taxonomic knowledge.

Most specimens (3,800) were taken on plants which we consider hosts (vs 184 on non-hosts) (Table 2). Among the seven species with more than 20 collected specimens, less than 10% of the specimens were collected on non-hosts for four of them, while two species had between 10 and 15% of specimens on non-hosts. In only one species, *Acizzia uncatoides*, almost 40% of specimens were collected on non-hosts, reflecting the high mobility of this invasive species.

Of these seven species, two, viz. *Calophya schini* and *Syncoptozus mexicanus*, are known to be monophagous, while the others are oligophagous. The suspected hosts of *Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. (*Clusia* sp.), *Mastigimas colombianus* (*Cedrela montana*), *M. longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov. (*Cedrela montana*) and *Synoza cornutiventris* (*Ficus americana* subsp. *andicola*, *Ficus* sp.) are native, probably including those not identified to species.

A third of the psyllid species and more than 70% of the specimens found during the survey are exotic: the Australian *Acizzia acaciaebaileyanae*, *A. uncatoides*, *Ctenarytaina eucalypti*, *C. spatulata* and *Glycaspis brimblecombei*, the North American *Syncoptozus mexicanus*, and the Peruvian *Calophya schini*. The high abundance of these species is promoted by urban landscaping practices using exotic tree species (Molina-Prieto and Acosta-Hernández 2018; Bernal et al. 2022; Molina 2022), such as *Acacia decurrens*, *A. melanoxylon*, *Schinus areira*, and *Magnolia grandiflora*. Incidently, species like *A. decurrens*, *A. melanoxylon*, *Eucalyptus globulus*, and *S. areira* were among the earliest species used for urban arborisation in Bogotá (Molina-Prieto and Acosta-Hernández 2018). *Schinus areira*, the host of *C. schini*, the most abundant psyllid species of the survey (63% of all specimens), constitutes one of the most characteristic trees of Bogotá (Jardín Botánico de Bogotá 2022). Native to Bolivia, northern Chile, and Peru (Bernal et al. 2016; POWO 2023), *S. areira* was introduced into Bogotá around 1850 (Molina-Prieto and Acosta-Hernández 2018) and now numbers approximately 24,000 trees (Jardín Botánico de Bogotá 2023). Immatures of *C. schini* induce pit-galls on the leaflets of their host (Pinzón and González 2002; Rendón-Mera et al. 2017), and it is not uncommon to find the heavily galled foliage of *S. areira* throughout the city (pers. observation of the authors).

There are twice as many native as exotic psyllid species (66%) but only four of these (*Leuronota albilinea* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov., *Mastigimas colombianus*, *M. longicaudatus* Rendón-Mera, Burckhardt & Vargas-Fonseca, sp. nov., and *Synoza cornutiventris*) are represented by more than five individuals. Of the other ten species, three are identified to species and the other seven may be undescribed, but more material is needed to confirm this.

The psyllid data from our arthropod survey show that the UGS in Bogotá support a diverse psyllid fauna. The dominance of exotic tree species (Jardín Botánico de Bogotá 2023), however, promotes adventive, potentially invasive psyllids at the expense of the native fauna. For conservation of the native insect fauna, the use of native trees and shrubs should be considered a priority when new UGS are planned.

Acknowledgements

We are grateful to Giovanny Fagua, Dimitri Forero, Alejandra Rodríguez (MPUJ), and Francisco Serna (UNAB) for granting access to the collections; Kristian Rubiano for designing the map figure; Jowita Drohojowska, Diana Percy, Igor Malenovský, Alexandra Viertler, and Armando Rosario-Lebrón for useful comments on previous manuscript drafts. DIR-M and SAV-F would like to thank Sara for her assistance at the MPUJ. This study forms part of the work of DIR-M towards a Ph.D. degree at the University of Basel, funded by a Swiss Government Excellence Scholarship for Foreign Students from the Federal Commission (ESKAS), the Freiwillige Akademische Gesellschaft (FAG) and the Maria Parmigiani-Fonds, Basel.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Funding

DIR-M was funded by the Swiss Government Excellence Scholarship for Foreign Students from the Federal Commission (ESKAS), the Freiwillige Akademische Gesellschaft (FAG) and the Maria Parmigiani-Fonds, Basel.

Author contributions

Conceptualization: VO, DB, JD, SAVF, DIRM. Data curation: DIRM, SAVF, VO, JD. Formal analysis: DIRM, DB. Investigation: DB, DIRM. Methodology: VO, JD. Project administration: VO, JD, SAVF. Resources: SAVF, DB, DIRM, VO, JD. Supervision: SAVF, JD, DB, VO. Validation: DB, DIRM. Visualization: DIRM. Writing - original draft: DIRM. Writing - review and editing: DIRM, VO, SAVF, DB, JD.

Author ORCIDs

Diana Isabel Rendón-Mera https://orcid.org/0000-0003-2553-9486
Daniel Burckhardt https://orcid.org/0000-0001-8368-5268
Sergio Andrés Vargas-Fonseca https://orcid.org/0000-0002-6716-905X

Data availability

All of the data that support the findings of this study are available in the main text.

References

Alcaldía Mayor de Bogotá (2009) Bogotá. Ciudad de estadísticas. No. 4. Ciudad Verde. Alcaldía Mayor de Bogotá, Secretaría Distrital de Planeación, Bogotá, 31 pp. https://observatorio.dadep.gov.co/documento/bogota-ciudad-de-estadisticas-no-4-ciudad-verde [accessed 24 Nov 2023]

Alcaldía Mayor de Bogotá (2021) Anexo 03. Inventario de espacio público peatonal y para el encuentro. In: Plan de Ordenamiento Territorial: Bogotá Reverdece 2022–2035. Alcaldía Mayor de Bogotá, Secretaría Distrital de Planeación, Bogotá, 200. https://www.sdp.gov.co/sites/default/files/anexo_03_inventario_espacio_publico_0.pdf [accessed 24 Nov 2023]

Alcaldía Mayor de Bogotá (2022) Manual de espacio público. Alcaldía Mayor de Bogotá, Secretaría Distrital de Planeación, Bogotá, 476 pp. https://www.sdp.gov.co/sites/default/files/generales/mep_p1-mon.pdf [accessed 24 Nov 2023]

Andrade GI, Remolina F, Wiesner D (2013) Assembling the pieces: A framework for the integration of multi-functional ecological main structure in the emerging urban region of Bogotá, Colombia. Urban Ecosystems 16(4): 723–739. https://doi.org/10.1007/s11252-013-0292-5

Andrade GI, Montenegro F, Remolina F, Wiesner D (2014) La Estructura Ecológica Principal en lo local. Propuesta de aplicación en la renovación urbana de Fenicia, Las Aguas, Bogotá. Revista Nodo 8: 42–54. https://revistas.uan.edu.co/index.php/nodo/article/view/100/81 [accessed 24 Nov 2023]

Anselm N, Brokamp G, Schütt B (2018) Assessment of land cover change in peri-urban high Andean environments south of Bogotá, Colombia. Land (Basel) 7(2): 1–28. https://doi.org/10.3390/land7020075

Aronson MFJ, La Sorte FA, Nilon CH, Katti M, Goddard MA, Lepczyk CA, Warren PS, Williams NSG, Cilliers S, Clarkson B, Dobbs C, Dolan R, Hedblom M, Klotz S, Kooijmans JL, Kühn I, Macgregor-Fors I, Mcdonnell M, Mörtberg U, Pyšek P, Siebert S, Sushinsky J, Werner P, Winter M (2014) A global analysis of the impacts of urbanization on bird and plant diversity reveals key anthropogenic drivers. Proceedings of the Royal Society B: Biological Sciences 281. https://doi.org/10.1098/rspb.2013.3330

Aronson MFJ, Lepczyk CA, Evans KL, Goddard MA, Lerman SB, MacIvor JS, Nilon CH, Vargo T (2017) Biodiversity in the city: Key challenges for urban green space management. Frontiers in Ecology and the Environment 15(4): 189–196. https://doi.org/10.1002/fee.1480

Baptiste B, Pinedo-Vasquez M, Gutierrez-Velez VH, Andrade GI, Vieira P, Estupiñán-Suárez LM, Londoño MC, Laurance W, Lee TM (2017) Greening peace in Colombia. Nature Ecology & Evolution 1(4): 0102. https://doi.org/10.1038/s41559-017-0102

Bastin S, Burckhardt D, Reyes-Betancort JA, Hernández-Suárez E, Ouvrard D (2023) A review of the jumping plant-lice (Hemiptera: Psylloidea) of the Canary Islands, with descriptions of two new genera and sixteen new species. Zootaxa 5313(1): 1–98. https://doi.org/10.11646/zootaxa.5313.1.1

Bernal R, Gradstein SR, Celis M (2016) Catálogo de plantas y liquenes de Colombia. Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá. http://catalogoplantasdecolombia.unal.edu.co [accessed 24 Nov 2023]

Bernal FA, Matulevich JA, Corredor JA, Coy-Barrera E (2022) GC/MS-based fingerprinting reveals two chemotypes in the leaf essential oils from *Magnolia grandiflora* trees within the urban forestry of a Colombian Andean plateau. Chemistry & Biodiversity 19(9): e202200448. https://doi.org/10.1002/cbdv.202200448

Brown RG, Hodkinson ID (1988) Taxonomy and ecology of the jumping plant-lice of Panama (Homoptera: Psylloidea). Lyneborg L (Ed.). E. J. Brill/Scandinavian Science Press Ltd., Leiden, 304 pp. https://doi.org/10.1163/9789004631304

Burckhardt D (1987) Jumping plant lice (Homoptera: Psylloidea) of the temperate neotropical region. Part 2: Psyllidae (subfamilies Diaphorininae, Acizziinae, Ciriacreminae and Psyllinae). Zoological Journal of the Linnean Society 90(2): 145–205. https://doi.org/10.1111/j.1096-3642.1987.tb01353.x

Burckhardt D (1988) Jumping plant lice (Homoptera: Psylloidea) of the temperate neotropical region. Part 3: Calophyidae and Triozidae. Zoological Journal of the Linnean Society 92(2): 115–191. https://doi.org/10.1111/j.1096-3642.1988.tb00101.x

Burckhardt D, Queiroz DL (2020) Neotropical jumping plant-lice (Hemiptera, Psylloidea) associated with plants of the tribe Detarieae (Leguminosae, Detarioideae). Zootaxa 4733(1): 1–73. https://doi.org/10.11646/zootaxa.4733.1.1

Burckhardt D, Queiroz DL (2023) Psylloidea. Catálogo Taxonômico da Fauna do Brasil. PNUD. http://fauna.jbrj.gov.br/fauna/faunadobrasil/97523 [accessed 24 Nov 2023]

Burckhardt D, Queiroz DL, Queiroz EC, Andrade DP, Zanol K, Rezende MQ, Kotrba M (2011) The jumping plant-louse *Mastigimas anjosi* spec. nov., a new pest of *Toona ciliata* (Meliaceae) in Brazil. Spixiana 34: 109–120.

Burckhardt D, Queiroz DL, Drohojowska J (2013) Revision of the neotropical jumping plant-louse genus *Mastigimas* (Hemiptera, Psylloidea) attacking *Cedrela* and *Toona* species (Meliaceae). Zootaxa 3745(1): 1–18. https://doi.org/10.11646/zootaxa.3745.1.1

Burckhardt D, Ouvrard D, Queiroz D, Percy D (2014) Psyllid Host-plants (Hemiptera: Psylloidea): resolving a semantic problem. The Florida Entomologist 97(1): 242–246. https://doi.org/10.1653/024.097.0132

Burckhardt D, Cuda JP, Diaz R, Overholt W, Prade P, de Queiroz DL, Vitorino MD, Wheeler GS (2018) Taxonomy of *Calophya* (Hemiptera: Calophyidae) Species Associated with *Schinus terebinthifolia* (Anacardiaceae). The Florida Entomologist 101(2): 178–188. https://doi.org/10.1653/024.101.0205

Burckhardt D, Ouvrard D, Percy DM (2021) An updated classification of the jumping plant-lice (Hemiptera: Psylloidea) integrating molecular and morphological evidence. European Journal of Taxonomy 736: 137–182. https://doi.org/10.5852/ejt.2021.736.1257

Burckhardt D, Serbina LŠ, Malenovský I, Queiroz DL, Aléné DC, Cho G, Percy DM (2024) Phylogeny and classification of jumping plant lice of the subfamily Liviinae (Hemiptera: Psylloidea: Liviidae) based on molecular and morphological data. Zoological Journal of the Linnean Society 201(2): 387–421. https://doi.org/10.1093/zoolinnean/zlad128

Carvajal-Castro JD, Ana María Ospina L, Toro-López Y, Anny Pulido G, Cabrera-Casas LX, Guerrero-Peláez S, García-Merchán VH, Vargas-Salinas F (2019) Birds vs bricks: Patterns of species diversity in response to urbanization in a Neotropical Andean city. PLoS ONE 14(6): 1–20. https://doi.org/10.1371/journal.pone.0218775

Díaz S, Settele J, Brondízio ES, Ngo HT, Agard J, Arneth A, Balvanera P, Brauman KA, Butchart SHM, Chan KMA, Lucas AG, Ichii K, Liu J, Subramanian SM, Midgley GF, Miloslavich P, Molnár Z, Obura D, Pfaff A, Polasky S, Purvis A, Razzaque J, Reyers B, Chowdhury RR, Shin YJ, Visseren-Hamakers I, Willis KJ, Zayas CN (2019) Pervasive human-driven decline of life on Earth points to the need for transformative change. Science 366(6471): eaax3100. https://doi.org/10.1126/science.aax3100

Dufour DL, Piperata BA (2004) Rural-to-urban migration in Latin America: An update and thoughts on the model. American Journal of Human Biology 16(4): 395–404. https://doi.org/10.1002/ajhb.20043

Durán-Prieto J, Ocampo V (2019) Registro de *Diversinervus elegans* Silvestri (Hymenoptera: Encyrtidae) para la ciudad de Bogotá, Colombia. Dugesiana 26(1): 51–52. https://doi.org/10.32870/dugesiana.v26i1.7057

Durán-Prieto J, Tulande-Marín E, Ocampo-Flóres V (2020) Avispas (Insecta: Hymenoptera) asociadas a árboles urbanos de la ciudad de Bogotá, Colombia. Revista Chilena de Entomologia 46(4): 681–698. https://doi.org/10.35249/rche.46.4.20.14

Durán-Prieto J, Olmi M, Tulande-Marín E (2023) New records of pincer wasps in urban parks of Bogotá city (Colombia) (Hymenoptera: Dryinidae). Osmia 11: 23–26. https://doi.org/10.47446/OSMIA11.5

Elmqvist T, Fragkias M, Goodness J, Güneralp B, Marcotullio PJ, McDonald RI, Parnell S, Schewenius M, Sendstad M, Seto KC, Wilkinson C (Eds.) (2013) Urbanization, biodiversity and ecosystem services: challenges and opportunities. Springer Netherlands, Dordrecht, 453–459. https://doi.org/10.1007/978-94-007-7088-1

Flora e Funga do Brasil (2023) Flora e Funga do Brasil. Jardim Botânico do Rio de Janeiro. http://floradobrasil.jbrj.gov.br [accessed 24 Nov 2023]

Foley JA, DeFries R, Asner GP, Barford C, Bonan G, Carpenter SR, Chapin FS, Coe MT, Daily GC, Gibbs HK, Helkowski JH, Holloway T, Howard EA, Kucharik CJ, Monfreda C, Patz JA, Prentice IC, Ramankutty N, Snyder PK (2005) Global consequences of land use. Science 309(5734): 570–574. https://doi.org/10.1126/science.1111772

Garizábal-Carmona JA, Mancera-Rodríguez NJ (2021) Bird species richness across a Northern Andean city: Effects of size, shape, land cover, and vegetation of

urban green spaces. Urban Forestry & Urban Greening 64: 127243. https://doi.org/10.1016/j.ufug.2021.127243

Goddard MA, Dougill AJ, Benton TG (2010) Scaling up from gardens: Biodiversity conservation in urban environments. Trends in Ecology & Evolution 25(2): 90–98. https://doi.org/10.1016/j.tree.2009.07.016

Halbert SE, Burckhardt D (2020) The psyllids (Hemiptera: Psylloidea) of Florida: newly established and rarely collected taxa and checklist. Insecta Mundi, 1–88. https://digitalcommons.unl.edu/insectamundi [accessed 24 Nov 2023]

Hodkinson ID (1974) The biology of the Psylloidea (Homoptera): A review. Bulletin of Entomological Research 64(2): 325–338. https://doi.org/10.1017/S0007485300031217

Hodkinson ID (1990) A new species of *Syncoptozus* Enderlein from Mexico with a redefinition of the subfamily Togepsyllinae Bekker-Migdisova (Insecta: Homoptera: Psylloidea). Journal of Natural History 24(3): 711–717. https://doi.org/10.1080/00222939000770491

Hodkinson ID (2009) Life cycle variation and adaptation in jumping plant lice (Insecta: Hemiptera: Psylloidea): a global synthesis. Journal of Natural History 43(1–2): 65–179. https://doi.org/10.1080/00222930802354167

Hollis D (2000) Preliminary list of Psylloidea known from Costa Rican cloud forests (1200–2000 m). In: Nadkarni NM, Wheelwright NT (Eds) Monteverde: ecology and conservation of a tropical cloud forest. Oxford University Press, New York, 573 pp.

Hollis D (2004) Australian Psylloidea: jumping plantlice and lerp insects. Australian Biological Resorces Study, Canberra, 216 pp.

Ives CD, Lentini PE, Threlfall CG, Ikin K, Shanahan DF, Garrard GE, Bekessy SA, Fuller RA, Mumaw L, Rayner L, Rowe R, Valentine LE, Kendal D (2016) Cities are hotspots for threatened species. Global Ecology and Biogeography 25(1): 117–126. https://doi.org/10.1111/geb.12404

Jardín Botánico de Bogotá (2022) Crónica – Falso pimiento: un árbol apetecido por un insecto foráneo. https://jbb.gov.co/cronica-falso-pimiento-un-arbol-apetecido-por-un-insecto-foraneo/ [accessed 24 Nov 2023]

Jardín Botánico de Bogotá (2023) Geoportal Datos Abiertos JBB. https://jardinbotanicobogota-jbb.hub.arcgis.com/ [accessed 24 Nov 2023]

Jaureguiberry P, Titeux N, Wiemers M, Bowler DE, Coscieme L, Golden AS, Guerra CA, Jacob U, Takahashi Y, Settele J, Díaz S, Molnár Z, Purvis A (2022) The direct drivers of recent global anthropogenic biodiversity loss. Science Advances 8(45): 1–12. https://doi.org/10.1126/sciadv.abm9982

Kong X, Zhou Z, Jiao L (2021) Hotspots of land-use change in global biodiversity hotspots. Resources, Conservation and Recycling 174: 105770. https://doi.org/10.1016/j.resconrec.2021.105770

Lepczyk CA, Aronson MFJ, Evans KL, Goddard MA, Lerman SB, Macivor JS (2017) Biodiversity in the city: Fundamental questions for understanding the ecology of urban green spaces for biodiversity conservation. Bioscience 67(9): 799–807. https://doi.org/10.1093/biosci/bix079

Makunde PT, Slippers B, Burckhardt D, de Queiroz DL, Lawson SA, Hurley BP (2020) Current and potential threat of psyllids (Hemiptera: Psylloidea) on eucalypts. Southern Forests 82(3): 233–242. https://doi.org/10.2989/20702620.2020.1813650

Marín-Gómez OH, Garzón Zuluaga JI, Santa-Aristizabal DM, López JH, López-Garcia MM (2016) Use of urban areas by two emblematic and threatened birds in the central Andes of Colombia. Revista Brasileira de Ornitologia 24(3): 260–266. https://doi.org/10.1007/BF03544353

Martínez DC, Morales I (2020) Annotated list of beetles (Insecta, Coleoptera) in an urban area of the Eastern Andes of Colombia. Check List 16(6): 1679–1693. https://doi.org/10.15560/16.6.1679

Mauck KE, Gebiola M, Percy DM (2024) The Hidden Secrets of Psylloidea: Biology, Behavior, Symbionts, and Ecology. Annual Review of Entomology 69(1): 277–302. https://doi.org/10.1146/annurev-ento-120120-114738

McDonald RI, Colbert M, Hamann M, Simkin R, Walsh B (2018) Nature in the Urban Century: A global assessment of where and how to conserve nature for biodiversity and human wellbeing. The Nature Conservancy, 78 pp. https://www.nature.org/en-us/what-we-do/our-insights/perspectives/nature-in-the-urban-century/

McKinney ML (2002) Urbanization, biodiversity, and conservation. Bioscience 52(10): 883–890. https://doi.org/10.1641/0006-3568(2002)052[0883:UBAC]2.0.CO;2

McKinney ML (2008) Effects of urbanization on species richness: A review of plants and animals. Urban Ecosystems 11(2): 161–176. https://doi.org/10.1007/s11252-007-0045-4

Molina D (2022) The forced retirement of a hard worker: The rise and fall of Eucalyptus in Bogotá. Environmental History 27(1): 58–85. https://doi.org/10.1086/717611

Molina-Prieto LF, Acosta-Hernández CF (2018) Orígenes y evolución de las arborizaciones urbanas en América Latina con énfasis en Bogotá y Medellín. Formas urbanas colonial, republicana y protomoderna. Gestion y Ambiente 21(2): 276–290. https://doi.org/10.15446/ga.v21n2.74906

Myers N, Mittermeler RA, Mittermeler CG, Da Fonseca GAB, Kent J (2000) Biodiversity hotspots for conservation priorities. Nature 2000 403: 853–858. https://doi.org/10.1038/35002501

Ocampo Flórez V, Durán Prieto J, Albornoz M, Forero D (2018) New plant associations for *Monalonion velezangeli* (Hemiptera: Miridae) in green urban areas of Bogotá (Colombia). Acta Biologica Colombiana 23(2). https://doi.org/10.15446/abc.v23n2.69374

OECD (2022) National urban policy review of Colombia. OECD Publishing, Paris, 316 pp. https://doi.org/10.1787/9ca1caae-en

Olaya-Arenas P, Durán-Prieto J, Pinzón-Florían OP, Becerra-Guerrero NS (2022) Insectos del arbolado urbano de Bogotá (Colombia): explorando su diversidad y función. Jardín Botánico de Bogotá José Celestino Mutis, Instituto de Investigación de Recursos Biológicos Alexander von Humboldt., Bogotá, 99 pp.

Olivares TS, Burckhardt D (1997) Jumping plant-lice of the New World genus *Calinda* (Hemiptera: Psylloidea: Triozidae). Revue Suisse de Zoologie 104: 231–344. https://doi.org/10.5962/bhl.part.79999

Ouvrard D (2023) Planthoppers: Psylles Website. http://dbtnt.hemiptest.infosyslab.fr/psyllist/?db=psylles&page=explorer&card=genera&lang=en [accessed 24 Nov 2023]

Ouvrard D, Chalise P, Percy DM (2015) Host-plant leaps versus host-plant shuffle: A global survey reveals contrasting patterns in an oligophagous insect group (Hemiptera, Psylloidea). Systematics and Biodiversity 13(5): 434–454. https://doi.org/10.1080/14772000.2015.1046969

Pinzón FOP, Guzmán CM, Navas NF (2002) Contribución al conocimiento de la biología, enemigos naturales y daños del pulgón del eucalipto *Ctenarytaina eucalypti* (Homoptera: Psyllidae). Revista Colombiana de Entomologia 28(2): 123–128. https://doi.org/10.25100/socolen.v28i2.9636

Pinzón OP, González RH (2002) Caracterización biológica, hábitos, enemigos naturales y fluctuación poblacional de *Calophya schini* Tuthill, en la especie forestal *ornamental Schinus molle* L. en Bogotá. Revista Científica, 2002, 137–154.

POWO (2023) Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. https://powo.science.kew.org/ [accessed 24 Nov 2023]

Pugh A, Withers T, Sopow S (2017) New eucalypt feeding insect established in New Zealand. NZ Farm Forestry. https://www.nzffa.org.nz/farm-forestry-model/the-essentials/forest-health-pests-and-diseases/Pests/glycaspis-brimblecombei-red-gum-lerp-psyllid/new-eucalypt-feeding-insect-established-in-new-zealand/ [accessed 24 Nov 2023]

Queiroz DL, Burckhardt D, Garrastazu MC (2017) Protocolo de coleta e montagem de psilídeos. Comunicado Técnico Embrapa 393: 1–11.

Rendón-Mera DI, Serna F, Burckhardt D (2017) Generic synopsis of the jumping plant-lice (Hemiptera: Sternorrhyncha: Psylloidea) from Colombia. Zootaxa 4350(3): 436–468. https://doi.org/10.11646/zootaxa.4350.3.2

Rodas CA, Serna R, Hurley BP, Bolaños MD, Granados GM, Wingfield MJ (2014) Three new and important insect pests recorded for the first time in Colombian plantations. Southern Forests 76(4): 245–252. https://doi.org/10.2989/20702620.2014.965983

Roncallo J, Ramos Ortega LM, Guerrero RJ, Sierra H (2022) Las hormigas exóticas en ambientes urbanos de Santa Marta, Colombia. Intropica: 202–217. https://doi.org/10.21676/23897864.4758

Seto KC, Güneralp B, Hutyra LR (2012) Global forecasts of urban expansion to 2030 and direct impacts on biodiversity and carbon pools. Proceedings of the National Academy of Sciences of the United States of America 109(40): 16083–16088. https://doi.org/10.1073/pnas.1211658109

SiB Colombia (2023) Biodiversidad en cifras. Sistema de Información sobre Biodiversidad de Colombia. https://cifras.biodiversidad.co/colombia (November 24, 2023).

Tzoulas K, Korpela K, Venn S, Yli-Pelkonen V, Kaźmierczak A, Niemela J, James P (2007) Promoting ecosystem and human health in urban areas using Green Infrastructure: A literature review. Landscape and Urban Planning 81(3): 167–178. https://doi.org/10.1016/j.landurbplan.2007.02.001

United Nations (2019) World urbanization prospects 2018: highlights. United Nations, Department of Economic and Social Affairs, Population Division, New York, 30 pp. https://population.un.org/wup/

Appendix 1

Table A1. Green Spaces (UGS) per district ("localidades"). In some instances, the park names as indicated on the collection labels differ from the official names, which are here provided in parentheses. See glossary of terms below, compilated from: Alcaldía Mayor de Bogotá 2021, 2022, IDRD 2023a, 2023b.

Neighbourhood / UGS	Identifier	Park level and typology	Park classification
Antonio Nariño			
Parque Ciudad Jardín	15-027	Structuring (sport)	Zonal
Chapinero			
Parque El Chicó	02-097	Proximity	Pocket
Parque El Virrey	02-014	Structuring (contemplative)	Zonal
Sendero Quebrada La Vieja	–	Protected area	–
Engativá			
Jardín Botánico de Bogotá	10-291	Structuring (contemplative)	Metropolitan
Rafael Uribe Uribe			
Parque Palermo Sur	18-035	Proximity	Neighbourhood
San Cristóbal			
Parque La Victoria	04-122	Structuring (sport)	Zonal

Neighbourhood / UGS	Identifier	Park level and typology	Park classification
Parque Primero de Mayo (Deportivo Primero de Mayo)	04-196	Structuring (sport)	Metropolitan
Parque San Cristóbal	04-127	Structuring (cultural)	Metropolitan
Parque Villa de los Alpes	04-075	Structuring (sport)	Zonal
Santa Fe			
Parque La Independencia (Independencia-Bicentenario)	03-039	Structuring (cultural)	Metropolitan
Parque Nacional	03-035	Structuring (cultural)	Metropolitan
Parque Ilarco	11-007	Proximity	Neighbourhood
Parque Tercer Milenio	03-085	Structuring (cultural)	Metropolitan
Universidad Distrital (Pueblo Viejo)	–	Structuring (NIA)	Zonal
Suba			
Cerro La Conejera	–	Protected area	Ecological
Parque Canal Molinos (Parque La Alhambra Sector Sur)	11-097	Proximity	Neighbourhood
Vacant lot	–		
Usaquén			
CAI Santa Barbara (Urbanización Santa Bárbara Primer Sector)	01-198	Proximity	Neighbourhood
Parque Altablanca	01-075	Structuring (sport)	Zonal
Parque Belmira	01-187	Proximity	Neighbourhood
Parque Cabañas del Norte	01-244	Proximity	Neighbourhood
Parque CAI Lisboa (Urbanización Ginebra Norte)	01-120	Proximity	Neighbourhood
Parque Cedro Madeira (El Cedro Maderia)	01-250	Proximity	Neighbourhood
Parque Contador Norte	01-083	Proximity	Neighbourhood
Parque Ginebra-Bella Suiza	01-106	Proximity	Neighbourhood
Parque La Francia (Urbanización Los Molinos)	01-118	Proximity	Neighbourhood
Parque La Vida	01-012	Structuring (recreational)	Zonal
Parque Nueva Autopista	01-064	Structuring (contemplative)	Zonal
Parque Usaquén 2 (Santa Barbara Primer Sector)	01-087	Proximity	Neighbourhood
Usme			
Parque Chuniza-Famaco (Famaco)	05-086	Structuring (cultural)	Zonal
Parque La Andrea	05-004	Structuring (sport)	Zonal
Parque Virrey Sur	05-016	Structuring (sport)	Zonal

Glossary

Contemplative: Spaces designed to promote the richness and diversity of vegetation cover for environmental enjoyment and low-impact human activities. They focus on a contemplative and educational relationship achieved through both permanence and travel. Their main spatial design component is ecological.

Cultural: Spaces designed to serve as meeting places, promoting permanence for the development of civic or cultural activities and outdoor events that highlight cultural values, traditions, and collective memory. The design can incorporate various care and social services, with permanence as the main spatial design component.

Ecological park: Parks that due to their high scenic and/or biological value, as well as their location and accessibility, are intended for the preservation, restoration, and sustainable ecological use of their biophysical elements for environmental education and passive recreation.

Metropolitan park: Parks covering an area of more than 10 hectares, designated for the development of both active and passive recreational uses, aiming to generate landscape and environmental values. The influence of these spaces extends across the entire territory of the city.

Neighbourhood park: Parks with an area of less than one hectare, designed for the recreation, meeting, and integration of the community, addressing the specific needs of the neighbourhoods.

Pocket park: Neighbourhood-type parks but with an area of less than 0.1 hectares, intended primarily for the recreation of children and senior citizens.

Protected area: Spaces with unique value for the natural heritage of the Capital District, ecosystems, biodiversity conservation, and the evolution of culture in the area.

Proximity space: Spaces mostly smaller than one hectare that offer a diverse range of leisure activities at a local scale.

Recreational: Spaces designed to provide facilities for the development of recreational activities, promoting relationships between individuals, the development of skills, and engagement in both free and structured activities. Their main spatial design component is play.

Sport: Spaces designed to accommodate physical activities and sports practice at different levels, including recreational, training, and competitive levels. The activities focus on the physical conditioning of different age groups, either individually or collectively. The main spatial design component of these spaces is sports.

Structuring space: Spaces larger than one hectare that provide a diverse range of leisure activities, supporting both regional and district scales. These spaces contribute not only to human interactions but also to environmental and ecosystemic connectivity.

Zonal park: Parks ranging from 1 to 10 hectares designed to fulfil the active recreational needs of a group of neighbourhoods and can accommodate specialized sport facilities.

References

Alcaldía Mayor de Bogotá (2021) Anexo 03. Inventario de espacio público peatonal y para el encuentro. In: Plan de Ordenamiento Territorial: Bogotá Reverdece 2022–2035. Alcaldía Mayor de Bogotá, Secretaría Distrital de Planeación, Bogotá, 200. https://www.sdp.gov.co/sites/default/files/anexo_03_inventario_espacio_publico_0.pdf [Accessed 24 Nov 2023]

Alcaldía Mayor de Bogotá (2022) Manual de espacio público. Alcaldía Mayor de Bogotá, Secretaría Distrital de Planeación, Bogotá, 476 pp. https://www.sdp.gov.co/sites/default/files/generales/mep_p1-mon.pdf [Accessed 24 Nov 2023]

IDRD (2023a) Buscador de parques. https://portalciudadano.idrd.gov.co/parques/buscar [Accessed 24 Nov 2023]

IDRD (2023b) Parques. Instituto Distrital de Recreación y Deporte. https://sim1.idrd.gov.co/parques-0 [Accessed 24 Nov 2023]